SERVICE / PARTS MANUAL

MODELS: WolfPac® 4000

HONDA GAS
DEUTZ DIESEL

*This equipment has been designed and tested to meet the requirements of the **Machinery Safety Directive 89/392/EEC and Amendments** and therefore carries the CE Mark*

REVISION: A 3/99 **P/N 56387**

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FOREWORD

These instructions include:

Safety regulations
Operating instructions
Maintenance instructions

These instructions have been prepared for operation on the construction site and for the maintenance engineer.

These instructions are intended to simplify operation of the machine and to avoid malfunctions through improper operation.

Observing the maintenance instructions will increase the reliability and service life of the machine when used on the construction site and reduce repair costs and downtimes.

Always keep these instructions at the place of use of the machine.

Only operate the machine as instructed and follow these instructions.

Observe the safety regulations as well as the guidelines of the civil engineering trade association. Observe the safety rules for the operation of road rollers and compactors and the pertinent regulations for the prevention of accidents.

Stone Construction Equipment, Inc. is not liable for the function of the machine when used in an improper manner or for other than the intended purpose.

Operating errors, improper maintenance and the use of incorrect operating materials are not covered by the warranty.

The above information does not extend the warranty and liability conditions of business of Stone Construction Equipment, Inc.

Please enter (data on machine type plate)

Machine Type: _____

Machine No.: _____

Engine Type: _____

Engine No.: _____

Stone Construction Equipment, Inc.
P.O. Box 150, Honeoye, New York 14471
Phone: (800) 888-9926
Fax: (716) 229-2363

USER INFORMATION

Model/Capacity _____

VIN _____

Purchase Date _____

Engine Make/No. _____

Battery Specification _____

_____

_____

_____

_____

_____

Service	Date
1	
2	
3	
4	
5	
6	
7	
8	
9	

Oil Specifications & Quantity

Engine _____ _____

Hydraulic _____ _____

Distributor

Limited Warranty

The Manufacturer warrants that products manufactured shall be free from defects in material and workmanship that develop under normal use for a period of 90 days for concrete vibrators and electric pumps, one year for Rhino®, Bulldog®, Wolfpac Rollers™, trowels, Stompers®, saws, forward plates, engine powered pumps, and 6 months for all other products from the date of shipment. The foregoing shall be the exclusive remedy of the buyer and the exclusive liability of the Manufacturer. Our warranty excludes normal replaceable wear items, i.e. gaskets, wear plates, seals, O-rings, V-belts, drive chains, clutches, etc. Any equipment, part or product which is furnished by the Manufacturer but manufactured by another, bears only the warranty given by such other manufacturer. (The Manufacturer extends the warranty period to "Lifetime" for the drum bearings and seals for the mortar mixers, and agrees to furnish, free of charge, the bearings and seals only upon receipt of the defective parts. The warranty is two years for eccentric bearings on the forward plate compactors, mortar and plaster mixer drums, trowel gearboxes and five years on the Bulldog trench roller eccentric bearings.) A Warranty Evaluation Form must accompany all defective parts. Warranty is voided by product abuse, alterations, and use of equipment in applications for which it was not intended, use of non-manufacturer parts, or failure to follow documented service instructions. The foregoing warranty is exclusive of all other warranties whether written or oral, expressed or implied. No warranty of merchantability or fitness for a particular purpose shall apply. The agents, dealer and employees of Manufacturer are not authorized to make modification to this warranty, or additional warranties binding on Manufacturer. Therefore, additional statements, whether oral or written, do not constitute warranty and should not be relied upon.

The Manufacturer's sole responsibility for any breach of the foregoing provision of this contract, with respect to any product or part not conforming to the Warranty or the description herein contained, is at its option (a) to repair, replace or refund such product or parts upon the prepaid return thereof to location designated specifically by the Manufacturer. Product returns not shipped prepaid or on an economical transportation basis will be refused (b) as an alternative to the foregoing modes of settlement - the Manufacturer's dealer to repair defective units with reimbursement for expenses, except labor, and be reviewed with the Manufacturer prior to repair. A Warranty Evaluation Form must accompany all warranty claims.

Except as set forth hereinabove and without limitation of the above, there are no warranties or other affirmations which extends beyond the description of the products and the fact hereof, or as to operational efficiency, product reliability or maintainability or compatibility with products furnished by others. In no event whether as a result of breach of contract or warranty or alleged negligence, shall the Manufacturer be liable for special or consequential damages including but not limited to: Loss of profits or revenues, loss of use of the product or any associated product, cost of capital, cost of substitute products, facilities or services or claims of customers.

No claim will be allowed for products lost or damaged in transit. Such claims should be filed with the carrier within fifteen days.

Effective April 1, 1998.

Stone Construction Equipment, Inc.
32 East Main Street, P. O. Box 150
Honeoye, NY 14471-0150
Phone: 1-800-888-9926 • 1-716-229-5141
Fax: 1-716-229-2363
www.stone-equip.com • e-mail: sceny@mcimail.com

Stone WolfPac 4000 – Specifications

MODEL Dimensions	STONE WolfPac 4000 Honda Gas	STONE WolfPac 4000 Deutz Diesel
Operating Wt.	4425 lbs. (2007 kg)	4520 lbs. (2050 kg)
Dry Wt.	3784 lbs. (1716 kg)	3879 lbs. (1759 kg)
Ballasted Wt.	6045 lbs. (2742 kg)	6140 lbs. (2785 kg)
L x W x H	106" x 47" x 68" (2692 x 1194 x 1727 mm)	106" x 47" x 68" (2692 x 1194 x 1727 mm)
Drum Width	40" (1016 mm)	40" (1016 mm)
Drum Diameter	30" (762 mm)	30" (762 mm)
Wall Clearance	2.0" (51 mm)	2.0" (51 mm)
Curb Clearance	14" (356 mm)	14" (356 mm)
Wheel Base	68" (1727 mm)	68" (1727 mm)
Operating System		
Engine - hp (kW)	20 hp Honda Gas (14,9 kW)	20 hp Deutz Diesel (14,9 kW)
Engine RPM Control: Hand Throttle	1400 RPM Idle 3100 RPM Full	1400 RPM Idle 2600 RPM Full
Fuel Capacity	8 Gallons (30 Liters)	8 Gallons (30 Liters)
Drive	Hydrostatic / Rear Drum Drive	Hydrostatic / Rear Drum Drive
Steering	Hydrostatic (Power Steering)	Hydrostatic (Power Steering)
Frame	Center Point Articulated	Center Point Articulated
Articulation	$\pm$ 30°	$\pm$ 30°
Oscillation	$\pm$ 15°	$\pm$ 15°
Water Control	Gravity Feed	Gravity Feed
Water Tank Capacity	65 Gallons (246 Liters)	65 Gallons (246 Liters)
Scrapers (2 per drum)	Urethane	Urethane
Performance		
Vibrating Drum	Front Drum / External	Front Drum / External
Centrifugal Force	3500 lbs. (15,5 kN)	3500 lbs. (15,5 kN)
Static Linear Force Front / Rear	F:60.5 lbs/In. (10,6 N/mm) R: 90.5 lbs/In. (15.9 N/mm)	F:60.5 lbs/In. (10,6 N/mm) R: 90.5 lbs/In. (15.9 N/mm)
Dynamic Linear Force Front / Rear	148 lbs/In. (25,9 N/mm)	148 lbs/In. (25,9 N/mm)
Static Linear Force Average	75 lbs/In. (13.3 N/mm)	75 lbs/In. (13.3 N/mm)
Frequency	3400 vpm (56,7 Hz)	3400 vpm (56,7 Hz)
Gradeability	30%	30%
Outside Turning Radius	6.0 ft / 10.0 ft (1.83 m / 3.05 m)	6.0 ft / 10.0 ft (1.83 m / 3.05 m)
Max. Area Cap. ft^2/hr	79,200 ft^2 /hr (7358m^2/hr)	79,200 ft^2 /hr (7358m^2/hr)
Travel Speed	0 - 4.5 m.p.h. (7.25 kM/hr)	0 - 4.5 m.p.h. (7.25 kM/hr)
Standards	Spring Loaded Urethane (4) Scrapers Hour Meter, Low Oil Shut Down Safety Neutral Switch Parking Brake - Hand Operated Hydraulic Bypass Extra Hydr, Filter Padded Arm Rests	Spring Loaded Urethane (4) Scrapers Hour Meter, Low Oil Pressure Light Safety Neutral Switch Parking Brake - Hand Operated Hydraulic Bypass Extra Hydr, Filter Padded Arm Rests

Machine Data

Brakes **Service** **Parking**	 hydrostatic manual operation friction
Recommended Fuel **Gas Unit** **Diesel Unit**	 gasoline 86 octane minimum diesel fuel blend capacity 8 gallons
Electric	12 volt system battery BCI group 70 550 cca 20 amp charge system
Hydraulic Oil	ATF Dexron III / Mercon type capacity 12 gallons / 45.4 liters
Engine Oil **Gas Unit** **Diesel Unit**	SAE 10W30 API SH OR SJ / capacity 1.5 quart (1.32 l) SAE 15W/40 API CC OR CD/capacity 3 quarts (2.75 l)
Spark Plugs	NGK BRP6ES gap .028-.031 in. (.7 - .8 mm)

Engine RPM

Do not exceed eccentric rpm, adjust engine rpm to obtain proper eccentric speed. A minimum idle RPM is required to run the cooler fan. Full RPM should not be exceeded and will void the engine warranty.

IDLE RPM	Honda Gas	1400 MIN
	Deutz Diesel	1400 MIN
FULL RPM	Honda Gas	3100 $\pm$100
	Deutz Diesel	2600 $\pm$100
ECCENTRIC FULL SPEED RPM		3400 $\pm$50

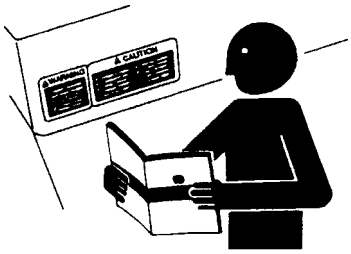
Machine Sound Level Test

Machine Type:	WolfPac 4000 - Gas
Sound Level Meter Calibration Date:	September 30, 1996
Meter Type:	Simpson Model 886-2 Type 2
Test Date:	September 30, 1996
Test Conditions:	
Temperature:	65 degrees Fahrenheit/18 degrees Celsius
Ambient Sound:	60 dba slow mode
Soil Condition:	Rubber Pad
Moisture Limit:	
Engine Speed:	3100 RPM/50 Hz
Frequency:	3400 VPM/ 56,7 Hz
Test Site:	Honeoye, New York USA
Sound Level at Operator Position:	94 dba without vibe
	97 dba with vibe

HEALTH & SAFETY

Before using this equipment, study this entire manual to become familiar with its operation. Do not allow untrained or unauthorized personnel, especially children, to operate this equipment. Use only factory authorized parts for service.

When warning decals are destroyed or missing, contact the Manufacturer immediately at 1-800-888-9926 for replacement. For the safety of yourself and others, it is imperative that the following rules are observed. Failure to do so may result in serious injury or death.



FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages and decals in this manual and on your machine safety signs. Keep decals in good condition. Replace missing or damaged decals. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs and decals are available through your dealer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your dealer.

This notation appears before warnings in the text. It means that the step which follows must be carried out to avoid the possibility of personal injury or death. These warnings are intended to help the technician avoid any potential hazards encountered in the normal service procedures. We strongly recommend that the reader takes advantage of the information provided to prevent personal injury or injury to others.

⚠ DANGER

⚠ WARNING

⚠ CAUTION

UNDERSTAND SIGNAL WORDS

A signal word – DANGER, WARNING, or CAUTION – is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

USE COMMON SENSE WHEN HANDLING FUELS

- Transport and handle fuel only when contained in approved safety container.
- Do not smoke when refueling or during any other fuel handling operation.
- Do not refuel while the engine is running or while it is still hot.
- If fuel is spilled during refueling, wipe it off from the engine immediately and discard the rag in a safe place.
- Do not operate the equipment if fuel or oil leaks exist - repair immediately.
- Never operate this equipment in an explosive atmosphere.

- Operator must always be seated when roller is running.
- Never allow more than one person on roller.
- Always turn engine off before dismounting from roller.
- Always apply parking brake when not in use.
- Never park roller on a hill.
- Never operate roller on slope greater than 15 degrees.
- Do not operate the roller in standing water.

- Ear protection required when operating this equipment.
- Exposure to loud noise can cause impairment or loss of hearing.

HOT SURFACES

- Muffler, engine, and engine shroud may be hot.
- Allow all components in the engine compartment to cool before performing any service work.

- Never operate unit in a poorly ventilated or enclosed area.
- Avoid prolonged breathing of exhaust gases.
- Engine exhaust fumes can cause sickness or death.

HEALTH & SAFETY

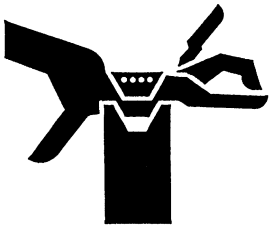
Safety Precautions

- Qualified personnel only. No untrained operators. Serious injury may occur.
- Users must be trained to operate this roller. Read the Operator's Manual and Engine Owner's Manual. Learn to operate this roller safely.
- Do not articulate on grades larger than 15°, roller may tip over.
- Do not operate across the sides of hills, roller may tip over.
- Do not operate at the edge of mats or roads, roller may tip over.
- Do not stand, be seated when roller is running.
- Do not park the roller on hills.
- Always turn off engine and apply brake before dismounting.

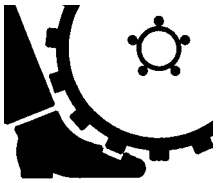
- Hydraulic system produces high pressures--incorrect hose replacement can cause serious personal injury. When performing service, refer to Operator's Manual for hose identification and connections.

- Caution: Escaping hydraulic fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury.
- Hydraulic fluid escaping under pressure from a very small hole can be almost invisible. Use a piece of cardboard or wood to search for possible leaks.
- Never use your hands to detect pressure leaks.
- Hydraulic tank temperature can reach 180° F maximum.

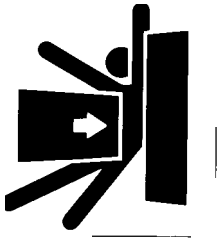
- Pressurized release of fluids from hydraulic system can cause serious burns.
- Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.



- Never perform any work on the roller while it is running. Before working on the roller, stop the engine and disconnect the spark plug wire(s) to prevent accidental starting, block drums to prevent rolling.
- Keep engine cover closed during the operation.
- Keep hands, clothing and jewelry away from all moving parts.
- Keep all guards in place.



- Keep feet clear of all drums.
- Keep work area free of bystanders.
- For foot protection, wear steel toe shoes or toe pads.

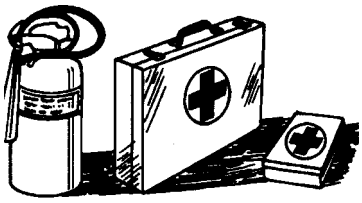


- Caution: Keep away from the machine's articulation area when the engine is running.
- Only start engine from operator's seat.
- Before starting machine, make sure that there are no persons or obstacles near or under machine.

PRACTICE SAFE MAINTENANCE

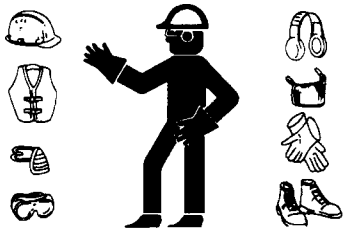
- Understand service procedure before doing work. Keep area clean and dry.
- Never lubricate, service or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.
- Securely support any machine elements that must be raised for service work.
- Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.
- Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

PREPARE FOR EMERGENCIES



- Be prepared if a fire starts.
- Keep a first aid kit and fire extinguisher handy.
- Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

- Starting fluid (ether) is highly flammable, do not use or an explosion or fire may result.



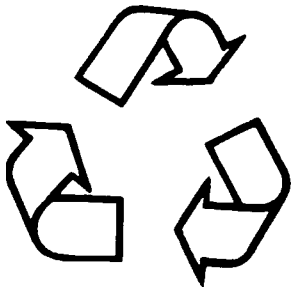
WEAR PROTECTIVE CLOTHING

- Wear close fitting clothing and safety equipment appropriate to the job.
- Prolonged exposure to loud noise can cause impairment or loss of hearing.
- Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.
- Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

PREVENT BYPASS STARTING

- Avoid possible injury or death from engine runaway.
- Do not start engine by shorting across starter terminal. Engine will start with PTO engaged if normal circuitry is bypassed.
- Start engine only from operator's station with PTO disengaged or in neutral.

DISPOSE OF WASTE PROPERLY



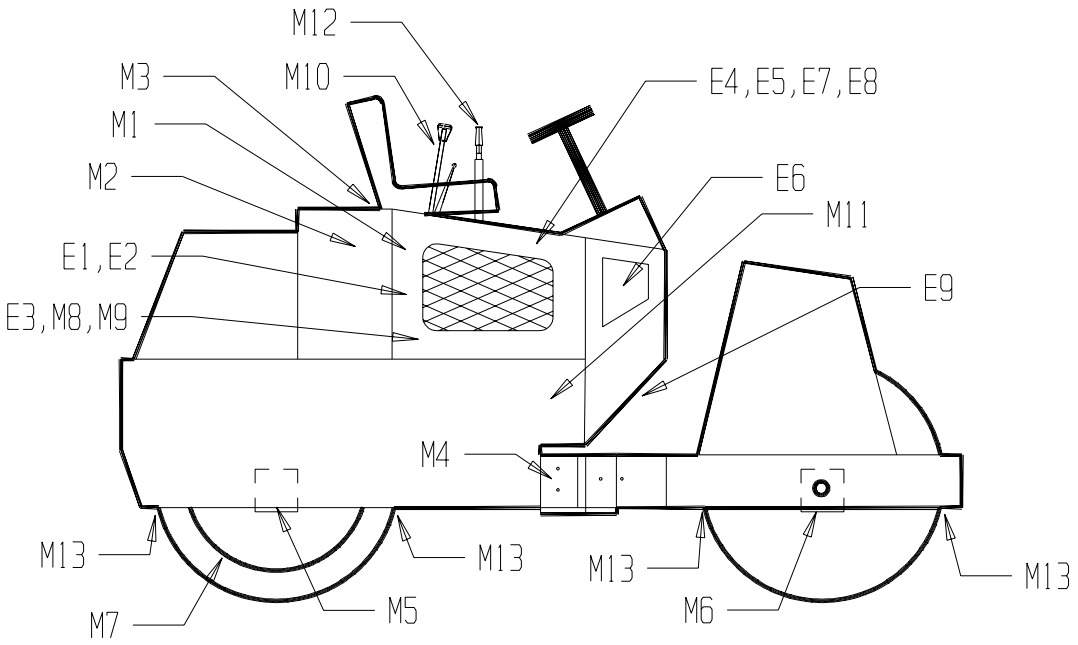
- Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.
- Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.
- Do not pour waste onto the ground, down a drain, or into any water source.
- Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.
- Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center.

IMPORTANT

The person attempting *any* of the following maintenance tasks must be authorized to do so and have read *and* understood *all* sections within this manual.

MAINTENANCE CHART

WolfPac® 4000



✔ CHECK/ADJUST O CLEAN/REPLACE	DAILY	WEEKLY	OTHER	INSTRUCTIONS
ENGINE #				READ EMISSION WARRANTY, OPERATING & ENGINE MANUAL
E1 OIL LEVEL	✔		O	HONDA REPLACE AT 20 HRS,THEN EVERY 100 HRS SAE 10W-30 SH OR SJ
	✔		O	DEUTZ REPLACE AT 50 HRS,THEN EVERY 200 HRS SAE 15W-40 CC,CD
E2 OIL FILTER			O	REPLACE EVERY 200 HRS (HONDA P/N 31230) (DEUTZ P/N 38483)
E3 IN-LINE FUEL FILTER			O	CHECK EVERY 100 HRS/REPLACE EVERY 300 HRS (P/N 38856) GAS ONLY
E4 ENGINE FUEL FILTER			O	HONDA EVERY 300 HRS (P/N 31231) DEUTZ EVERY 200 HRS (P/N 39062)
E5 HONDA PRECLEANER	✔		O	CLEAN EVERY 50 HRS REPLACE EVERY 300 HRS P/N 31232 HONDA ONLY
HONDA AIR FILTER	✔		O	CLEAN EVERY 50 HRS REPLACE EVERY 300 HRS P/N 31233 HONDA ONLY
E6 DIESEL AIR FILTER	✔		O	REPLACE OIL BATH EVERY 50 HRS 15W-40 CC,CD
E7 SPARK PLUGS			O	100 HRS CLEAN,GAP (.028) 300 HRS REPLACE P/N 31234 (NGK BPR6ES)
E8 ENGINE RPM IDLE/FULL			✔	CHECK IDLE & FULL SPEED RPM EVERY 300 HRS #
E9 CLEAN COOLING SYS.		✔	O	CLEAN/BLOW OUT AIR INLETS,ENGINE FINS & OIL COOLER (30 PSI MAX)
E10 VALVE CLEARANCE ##			✔	CHECK/ADJUST HONDA 300 HRS, DEUTZ 200 HRS
E11 FUEL INJECTORS ##			O	500 HRS CLEAN,TEST OR REPLACE (P/N 38503) DEUTZ ONLY
MACHINE				IMPORTANT READ OPERATING MANUAL & ENGINE MANUAL
M1 HYDRAULIC OIL LEVEL	✔		O	REPLACE EVERY 800 HRS ATF DEXTRON III / MERCON
M2 HYDRAULIC FILTER			O	REPLACE EVERY 100 HRS (P/N 35445)
M3 HYDRAULIC BREATHER			O	REPLACE EVERY 800 HRS (P/N 35483)
M4 HINGE (8 PLACES)		O		LUBE WEEKLY WITH LITHIUM BASE GREASE
M5 LEFT REAR BEARING		O		LUBE WEEKLY WITH LITHIUM BASE GREASE
M6 FRONT RH/LH BEARINGS		O		LUBE WEEKLY WITH LITHIUM BASE GREASE
M7 CHAIN & CONN LINKS			O	CHECK/TENSION/LUBRICATE CHAIN WEEKLY WITH CHAIN LUBE
M8 FUEL TANK & STRAINER #		✔	O	CLEAN TANK & STRAINER (P/N 46009) EVERY 150 HRS OR YEARLY
M9 FUEL LINES & CLAMPS			O	CHECK WEEKLY/REPLACE FUEL LINES EVERY 2 YEARS (P/N 46186)
M10 CONTROLS	✔			CHECK OPERATION,LUBE CABLES & LEVERS EVERY 200 HRS,LIGHT OIL
M11 BATTERY/CHARGE SYSTEM			O	CHECK & CLEAN MONTHLY/CHECK FOR 13-14 VOLTS AT FULL RPM
M12 PARKING BRAKE	✔			CLEAN UNIT & INSPECT
M13 SCRAPERS/MOUNTS	✔		O	CLEAN UNIT & INSPECT
M14 SPRINKLERS	✔			CLEAN UNIT & INSPECT
M15 LEAKS OIL & FUEL	✔			CLEAN UNIT & INSPECT
M16 HARDWARE/ENGINE MOUNT	✔			CLEAN UNIT & CHECK TORQUE

IMPORTANT READ HONDA EMISSION WARRANTY STATEMENT, STONE OPERATING & ENGINE MANUAL
SEE AUTHORIZED ENGINE SERVICE DEALER AND/OR REFER TO ENGINE SHOP MANUAL FOR PROCEDURES

553800

MAINTENANCE

⚠WARNING

BEFORE MAKING ANY ADJUSTMENTS, BE SURE THE ROLLER IS PARKED ON LEVEL GROUND, PARKING BRAKE IS ON AND DRUMS ARE BLOCKED. DISCONNECT BATTERY TO AVOID ACCIDENTAL IGNITION OF ENGINE. SEVERE PERSONAL INJURY MAY OCCUR.

IMPORTANT: Read Honda Emission Warranty Statement and Engine Manual before operating or performing maintenance.

ADDITIONAL SERVICE INFORMATION

This is not a detailed engine service manual. If you want more detailed service information refer to engine manuals:

56237 Manual Engine Gx620
56238 Manual Shop Gx620

ENGINE OIL AND FILTER

HONDA Replace oil at 20 hours, then change oil every 100 hours. Change the oil filter every 200 hours.

DEUTZ Replace oil at 50 hours, then change oil every 100 hours. Change the oil filter every 200 hours.

1. Remove the oil filler cap, drain bolt (and oil filter when required). Drain oil into a suitable container.
2. Clean and install the drain bolt, tighten securely. When required, install new oil filter and lightly oil filter seal.
3. Fill with the recommended oil, fill to the upper limit mark on the dipstick, and tighten the oil filler cap securely.
4. Run engine for 2 – 3 minutes, stop engine, check oil level, and check for leaks.

NOTE: Please dispose of used motor oil and filter in a manner that does not harm the environment.

Under heavy loads, change engine oil and filter more frequently.

AIR CLEANER

HONDA Foam Pre-Cleaner: Clean in warm soapy water, rinse, and dry thoroughly. Apply oil to the foam and squeeze out excess oil. The engine will smoke if too much oil is left in the foam.

Paper Element: Tap the element lightly on a hard surface to remove excess dirt or blow pressurized air (30 psi max.) through the filter from the air cleaner cover side. Do not brush the dirt off.

Replace elements if damaged or excessively dirty.

DEUTZ Remove the air cleaner cup, empty the oil, and clean. Fill with oil to the level mark, install.

FUEL FILTER

HONDA Remove the Honda control cover and inspect filter, replace if water or dirt sediment is found. Replace Honda and in-line filter at scheduled maintenance.

DEUTZ Replace at scheduled maintenance, lightly oil filter seal.

SPARK PLUG

Recommended spark plug:
BPR6ES (NGK)
W20EPR-U (NIPPONDENSO)

To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

Clean and replace at scheduled maintenance. Clean engine before removing spark plugs. Visually inspect

the spark plug, discard if insulator or tip is damaged. Check that the spark plug washer is in good condition. If spark plug is to be reused, clean with a wire brush and set plug gap .028 - .031in (.70 - .80mm). Thread the spark plug in by hand to prevent cross threading. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.

- If installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer.
- If reinstalling a used spark plug, tighten 1/8 – 1/4 turn after the spark plug seats to compress the washer.

NOTICE

- The spark plug must be securely tightened. An improperly tightened spark plug can become very hot and may cause engine damage.
- Use only the recommended spark plug or equivalent. A spark plug that has an improper heat range may cause engine damage.

ENGINE RPM

Start the engine and allow it to warm up to normal operating temperature, check the idle speed (1,400 ± 100), and adjust idle stop screw as required.

Check the full speed, Honda 3,100 ± 100, Deutz 2,600 ± 100, and adjust full speed stop screw as required.

Notice the idle and full speed RPM setting should not be modified or eccentric system may be damaged. See Eccentric for proper operating speed.

COOLING SYSTEM

The machine should be cleaned at scheduled maintenance. This should include cleaning the air inlet screens, the oil cooler and the engine cooling fins. Wash machine with warm soapy water, rinse off mud and dirt with water, and use pressurized air (30-psi max.) to blow dirt and debris from oil cooler fins and engine. (Diesel is equipped with removable air deflector).

VALVE CLEARANCE/FLYWHEEL BRAKE

Due to special tool requirements and training, an authorized engine dealer should perform this service unless the owner has the proper tools and proper shop manuals.

HYDRAULIC OIL

⚠WARNING

ESCAPING HYDRAULIC FLUID UNDER PRESSURE CAN HAVE SUFFICIENT FORCE TO PENETRATE THE SKIN, CAUSING SERIOUS PERSONAL INJURY. HYDRAULIC FLUID ESCAPING UNDER PRESSURE FROM A VERY SMALL HOLE CAN BE ALMOST INVISIBLE. USE A PIECE OF CARDBOARD OR WOOD TO SEARCH FOR POSSIBLE LEAKS. NEVER USE YOUR HANDS TO DETECT PRESSURE LEAKS. IF YOU ARE INJURED BY ESCAPING HYDRAULIC FLUIDS, SEE A DOCTOR AT ONCE. SERIOUS INFECTION OR REACTION CAN DEVELOP IF PROPER MEDICAL TREATMENT IS NOT ADMINISTERED IMMEDIATELY.

Exxon ATF Dexron III or Mercon hydraulic oil is recommended for the hydraulic system. Do not mix hydraulic oils. Check oil level daily, replace hydraulic oil every 800 hours.

1. Clean hydraulic tank, remove oil breather cap slowly.
2. Remove drain plug and drain into suitable container.
3. Clean drain plug, apply thread sealant to the plug, install and tighten.
4. Add fresh hydraulic oil until level is visible in the sight gauge. A 1/4 – 1/2 air bubble will be seen at the top of the gauge.
5. Clean breather cap, install and tighten.
6. Idle engine 2-3 minutes, stop engine and check oil level.

CAUTION: If hoses, filter and/or hydraulic components were changed, start the engine and purge the air from the system prior to checking the oil level. To do this, idle the engine for three minutes with control lever in neutral position. Slowly engage forward to reverse. This allows fluid to replace air introduced with the filter change. If this procedure is not followed, partial or complete failure of the pump may result.

HYDRAULIC OIL FILTER

Replace at five hours. This is to rid the system of any trapped contamination from the wear-in of parts. Then replace every 100 hours. Use beta rated filter (i.e. Parker 12AT-10C,10 micron filter).

1. Remove the spin-on hydraulic oil filter.

2. Lightly oil the seal on the new filter, install and tighten.

3. Idle engine 2-3 minutes, stop engine, check for proper hydraulic oil level, and check for leaks.

CAUTION: Never overfill the hydraulic tank. Use the sight gauge located on the hydraulic tank. A 1/4-1/2" air bubble will be seen at the top of the gauge showing the fluid level.

Before disconnecting any hydraulic lines, be sure engine is shut off and relieve all pressure. Before applying pressure to system, be sure all connections are tight and lines, fittings and hoses are not damaged.

HYDRAULIC BREATHER CAP

Replace every 800 hours or yearly.

GREASE FITTINGS

Use a grease gun to grease below fittings, use lithium grease. Remove the blue protection cap off fitting before greasing.
Hinge (8) fittings
Left rear bearing (1) fitting
Front RH/LH bearing (1) fitting per side

CHAIN

Lubricate weekly with chain lube, inspect connecting links and check chain slack 3/8-1/2 inch.

- Chain lubrication is required weekly. To avoid sprocket wear, replace chain when fully stretched.
- For chain replacement, use only factory authorized parts.

CHAIN ADJUSTMENT

Remove back panel, loosen mounting bolts on side and adjust with adjusting bolt to tighten chain 3/8 to 1/2 inch chain slack. For further chain adjustment, remove the half link. Retighten mounting bolts and replace panel. Avoid overtightening chain as this causes excessive wear and power loss.

FUEL TANK/STRAINER

Drain and flush the fuel tank every 150 hours or yearly. Remove the strainer petcock and clean.

FUEL LINES

Inspect fuel line condition and clamps weekly. Replace fuel lines every two years.

FORWARD/REVERSE/NEUTRAL ADJUSTMENT

The forward/reverse lever should be aligned with "NEUTRAL" on the console when the roller is moving neither forward nor backward with the engine running. If the lever is not aligned, adjust it as described below.

1. Shut off the engine with the forward/reverse lever left in operating neutral position, the position when the roller moves neither forward nor reverse. Apply the parking brake.

2. Open the engine hood of the machine.

3. Disconnect the linkage from the hydrostatic transmission from the clevis. Do this by removing the lock nut from the clevis pin and removing the pin.

4. Now screw clevis in or out to adjust.

5. Secure the clevis to the transmission lever with the clevis pin, secure with the lock nut and tighten clevis nut.

Linkage play must be minimal at both connections. Replace clevis and/or link if required.

NEUTRAL INTERLOCK

The purpose of the neutral interlock switch is to prevent the engine starting when the forward/reverse lever is not in the neutral position.

1. Disconnect battery cables from battery.

2. a. Disconnect (2) wires from neutral interlock switch and connect it to leads from an ohmmeter.
   b. When switch is actuated, ohmmeter should read zero resistance.

3. Adjustments must be made at transmission.

4. Disconnect ohmmeter and reconnect interlock wires and battery cables.

CONTROL CABLES

Forward/reverse, brake, throttle, and choke. Lubricate all cable ends every 200 hours with penetrating oil.

⚠WARNING

DO NOT ADJUST THE CONTROL CABLE WITH THE POWER ON OR THE ENGINE RUNNING. SERIOUS INJURY OR DEATH COULD RESULT. A GRADUAL OR SUDDEN INCREASE IN THE NO-LOAD FRICTION (CABLE DISCONNECT AT BOTH ENDS) OF A CONTROL CABLE IS AN INDICATION OF A PENDING OR PRESENT PERFORMANCE PROBLEM. THE CONTROL CABLE SHOULD BE REPLACED, OTHERWISE SERIOUS INJURY OR DEATH COULD RESULT. A GRADUAL OR SUDDEN DECREASE IN THE USABLE STROKE IS AN INDICATION OF A PENDING OR PRESENT PERFORMANCE PROBLEM. THE CONTROL CABLE SHOULD BE REPLACED, OTHERWISE SERIOUS INJURY OR DEATH COULD RESULT. CONTROL CABLES WHICH HAVE MOISTURE INSIDE OF THEM AND/OR HAVE FROZEN SHOULD BE REPLACED. DO NOT APPLY HEAT TO THAW OR DRY CONTROL CABLES.

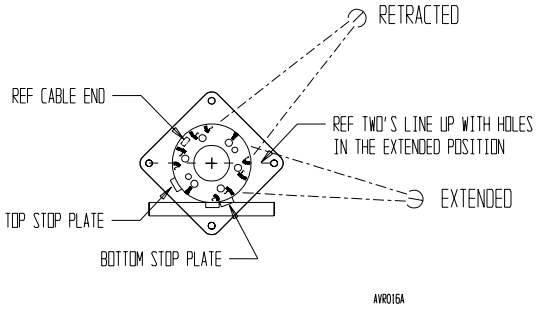
PARKING BRAKE

It should take a force of 25-35 pounds, applied at the end of the brake lever, to apply the brake lever. The brake should prevent the roller from moving when applied. Turn knob on brake lever to adjust. Clockwise will increase the force, counterclockwise will decrease it. In the event this lever force cannot be obtained, adjust the brake shoes via the star wheel. The star wheel may be accessible through a slot located in the brake cover plate on the rear right side of the machine.

NOTE: Before adjusting star wheel, back off the brake lever knob (counterclockwise) to gain adjustment at knob.

THROTTLE LEVER

Throttle should operate smoothly and hold engine at full RPM. Throttle should require 10 lbs. to operate. To adjust tension, loctite locknut and tighten until 10 lbs. is required to move from full to idle position. Refer to illustration below for assembly information travel 1 1/8".



SCRAPER MAINTENANCE/ADJUSTMENT

Scrapers must make uniform contact across entire width of drum to ensure even application of water from the sprinkler system. There are three aspects of scraper adjustment for uniform contact. First, spring tension is

adjusted by sliding hinge mechanism (refer to item 18 on Mainframe Assembly) in or away from drum surface.

For optimum urethane contact, 10 lbs. of spring tension is recommended. Second, the urethane portion of the scrapers can be extended or retracted.

Finally, the scrapers may be shifted side to side for centering on the drum. Refer to Mainframe Assembly and follow these steps:

1. Loosen 7 bolts, holding items 16 & 59, on the assembly until the nuts are flush with ends of bolts.

2. Loosen the 4 bolts that hold item 15 to the hinges.

3. Loosen the 2 bolts that hold item 18 to the frame and slide away or towards the drum.

NOTE: The spring tension should now be minimal and adjustments of the urethane exposure, side to side position on the drum, and relative distance to the unit (spring tension) from the drum can all be set for optimum performance.

4. To assemble, reverse the above procedure making sure that proper adjustment of each sequence is achieved before retightening the bolts.

WATER TANK

The water tank is polyethylene to prevent corrosion. The water tank holds 65 US gallons. Dirty water will clog the sprinkler bars. If the water tank is subject to freezing temperatures, all the water lines and the water tank must be drained by drawing through sprinkler tubes or removing the cover at the rear of the machine to gain access to the water tank, flush and drain plug.

SPRINKLERS

The sprinkler tube assemblies are PVC to prevent corrosion. The sprinkler tube assemblies are equipped with a clean out plug for cleaning when required.

ECCENTRICS

When vibratory compaction is necessary, engage eccentrics by pushing hydraulic valve lever all the way forward. Operator may vary the frequency and therefore the centrifugal force by varying engine RPM. Eccentrics should be turned off whenever the roller is stopped, or stopped to change direction. Do not run the eccentric on any non-yielding surface, such as concrete or aged asphalt.

NOTE: Test vibration with front drum on soft ground. Run engine at full RPM to obtain vib speed 3400 $\pm$ 50 - check per below.

To check vibration with a vibrotach, place the vibrotach on the vibrating member surface, record reading when the wire reaches maximum movement. (Vibrotach P/N 37891). Adjust engine RPM to obtain proper eccentric speed.

When checking vibration with a strobe light, place a horizontal line on the vibrating member surface. Check with strobe light-record reading when the line reaches minimum movement.

ENGINE MOUNTING

Check weekly. Tighten all mounting hardware for proper torque, refer to parts illustrations for proper torque.

HARDWARE

Inspect all hardware for tightness. Refer to parts illustrations for proper torque.

TORQUE GUIDELINES

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fasteners' threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

SAE GRADE 5
Coarse Thread

SIZE	PLATED	
1/4 – 20 (.250)	6 ft. lbs.	8 Nm
5/16 – 18 (.3125)	13 ft. lbs.	18 Nm
3/8 – 16 (.375)	23 ft. lbs.	31 Nm
7/16 – 14 (.4375)	37 ft. lbs.	50 Nm
1/2 – 13 (.500)	57 ft. lbs.	77 Nm
9/16 – 12 (.5625)	82 ft. lbs.	111 Nm
5/8 – 11 (.625)	112 ft. lbs.	152 Nm
3/4 – 10 (.750)	200 ft. lbs.	271 Nm
7/8 – 9 (.875)	322 ft. lbs.	436.5 Nm
1 – 8 (1.000)	483 ft. lbs.	655 Nm

SAE GRADE 8
Coarse Thread

SIZE	PLATED	
1/4 – 20 (.250)	9 ft. lbs.	12 Nm
5/16 – 18 (.3125)	18 ft. lbs.	24 Nm
3/8 – 16 (.375)	33 ft. lbs.	45 Nm
7/16 – 14 (.4375)	52 ft. lbs.	70 Nm
1/2 – 13 (.500)	80 ft. lbs.	108 Nm
9/16 – 12 (.5625)	115 ft. lbs.	156 Nm
5/8 – 11 (.625)	159 ft. lbs.	215 Nm
3/4 – 10 (.750)	282 ft. lbs.	382 Nm
7/8 – 9 (.875)	454 ft. lbs.	615 Nm
1 – 8 (1.000)	682 ft. lbs.	925 Nm

SAE GRADE 5
Fine Thread

SIZE	PLATED	
1/4 – 28 (.250)	7 ft. lbs.	10Nm
5/16 – 24 (.3125)	14 ft. lbs.	19 Nm
3/8 – 24 (.375)	26 ft. lbs.	35 Nm
7/16 – 20 (.4375)	41 ft. lbs.	56 Nm
1/2 – 20 (.500)	64 ft. lbs.	87 Nm
9/16 – 18 (.5625)	91 ft. lbs.	123 Nm
5/8 – 18 (.625)	128 ft. lbs.	173 Nm
3/4 – 16 (.750)	223 ft. lbs.	302 Nm
7/8 – 14 (.875)	355 ft. lbs.	481 Nm
1 – 12 (1.000)	529 ft. lbs.	717 Nm
1 – 14 (1.000)	541 ft. lbs.	733 Nm

SAE GRADE 8
Fine Thread

SIZE	PLATED	
1/4 – 28 (.250)	10 ft. lbs.	14Nm
5/16 – 24 (.3125)	20 ft. lbs.	27 Nm
3/8 – 24 (.375)	37 ft. lbs.	50 Nm
7/16 – 20 (.4375)	58 ft. lbs.	79 Nm
1/2 – 20 (.500)	90 ft. lbs.	122 Nm
9/16 – 18 (.5625)	129 ft. lbs.	175 Nm
5/8 – 18 (.625)	180 ft. lbs.	244 Nm
3/4 – 16 (.750)	315 ft. lbs.	427 Nm
7/8 – 9 (.875)	501 ft. lbs.	679 Nm
1 – 12 (1.000)	746 ft. lbs.	1011 Nm
1 – 14 (1.000)	764 ft. lbs.	1036 Nm

LOCTITE

Loctite 262 threadlocker is required to prevent hardware from loosening.

Refer to exploded diagrams and parts list for "*" indicating where loctite is required.

BATTERY

SERVICING BATTERY

⚠WARNING

BATTERY GAS CAN EXPLODE. KEEP SPARKS AND FLAMES AWAY FROM BATTERIES. USE A FLASHLIGHT TO CHECK BATTERY ELECTROLYTE LEVEL.

NEVER CHECK BATTERY CHARGE BY PLACING A METAL OBJECT ACROSS THE POSTS. USE A VOLTMETER OR HYDROMETER.

ALWAYS REMOVE GROUNDED NEGATIVE (-) BATTERY CLAMP FIRST AND REPLACE IT LAST.

1. On regular batteries, check electrolyte level. Fill each cell to bottom of filler neck with distilled water.

2. Keep batteries clean by wiping them with a damp cloth. Keep all connections clean and tight. Remove any corrosion and wash terminals with a solution of 1 part baking soda and 4 parts water. Tighten all connections securely.

NOTE: Coat battery terminals and connectors with a mixture of petroleum jelly and baking soda to retard corrosion.

3. Keep battery fully charged, especially during cold weather. If a battery charger is used, turn charger off before connecting charger to battery(ies). Attach POSITIVE (+) battery post. Then attach NEGATIVE (-) battery charger lead to a good ground.

Once a month, check the battery for proper charge of 12.5 volts. Check for proper fluid level. Use distilled water when adding and run 30 minutes to mix. Clean battery, posts, and terminals. Disconnect battery cables before charging to avoid damage to the electrical system.

⚠WARNING

SULFURIC ACID IN BATTERY ELECTROLYTE IS POISONOUS. IT IS STRONG ENOUGH TO BURN SKIN, EAT HOLES IN CLOTHING, AND CAUSE BLINDNESS IF SPLASHED INTO EYES.

Avoid the hazard by:

1. **Filling batteries in a well-ventilated area.**
2. **Wearing eye protection and rubber gloves.**
3. **Avoiding breathing fumes when electrolyte is added.**
4. **Avoiding spilling or dripping electrolyte.**
5. **Use proper jump start procedure.**

If you spill acid on yourself:

1. **Flush your skin with water.**
2. **Apply baking soda or lime to help neutralize the acid.**
3. **Flush your eyes with water for 10 – 15 minutes. Get medical attention immediately.**

If acid is swallowed:

1. **Drink large amounts of water or milk.**
2. **Then drink milk of magnesia, beaten eggs, or vegetable oil.**
3. **Get medical attention immediately.**

In freezing weather, run engine at least 30 minutes to assure thorough mixing after adding water to battery.

If necessary to replace battery(ies), replacements must meet or exceed the following recommended capabilities at - 18° C (0° F):

12 Volt – Standard duty battery
BCI group 70 – 550CCA

BATTERY INSTALLATION

⚠WARNING

ALWAYS CONNECT GROUNDED CABLE LAST. CLEAN AND SECURELY CONNECT EACH CABLE TO BATTERY TERMINAL OF THE SAME POLARITY. BATTERY SHOULD BE SECURELY FASTENED WITH PROPERLY INSTALLED HOLD-DOWNS.

JUMP STARTING

CAUTION: Do not let vehicles touch. Put emergency brake ON. Set both vehicles in PARK (NEUTRAL if manual transmission) and turn ignition and electrical accessories off.

Attach jumper cables in this order:

1. dead positive block to
2. good positive
3. good negative to
4. engine block or frame of dead car. Start GOOD vehicle and let run a few minutes. Then start DEAD VEHICLE. Remove cables in reverse order 4, 3, 2, 1.

CHARGE SYSTEM

Charge system should be checked every month. With the engine running at full speed voltage should be 13 – 14 volts.

SWITCH BOX/FUSE 25A (HONDA ONLY)

If charge system fails, check the fuse located at the key switch box. If fuse fails frequently it usually indicates a short circuit or an overload in the electrical system. Refer to wiring diagram and inspect wires.

NOTICE: Electrical system is not designed for field add-on electrical options, do not modify the electrical system. Contact your authorized dealer.

SPECIFIED FUSE: 25A

Turn the engine switch OFF and remove the key before checking or replacing fuses to prevent accidental short-circuiting.

To replace fuse pull the old fuse out of the clips with your finger. Push a new fuse into the clips.

NOTICE: Never use a fuse with a different rating from that specified. Serious damage to the electrical system or a fire may result.

IGNITION SYSTEM

The 20 hp Honda is equipped with electronic ignition. Checking and replacing the spark plug is the only ignition system maintenance required.

DIESEL ONLY

BELT TENSION

Check belts weekly for proper tension. Belt deflection at 1/8 inch at 7 pounds is recommended. A slight amount of belt deflection should be noticed. The 3V belt design can handle a larger amount of HP. For optimum performance, replace belt yearly. If any belt squealing is present, belts must be tightened or replaced.

FUEL INJECTORS

Service or replace fuel injectors every 500 hours.

⚠WARNING

DO NOT ATTEMPT TO DISASSEMBLE OR ADJUST THE FUEL INJECTORS YOURSELF. REMOVE THEM FROM THE ENGINE AND HAVE THEM SERVICED BY AN AUTHORIZED ENGINE DEALER.

DIESEL ENGINE ELECTRICAL SYSTEM INSTALLATION GUIDELINES

When installing new or reworking used diesel engines, this list of guidelines should be strictly adhered to. Following these guidelines should prevent damage to the electrical system of diesel engines.

- Always disconnect the positive cable from the battery before performing any work on the machine that involves welding or working on the electrical system.
- Avoid jump starting a diesel engine. Either change the battery or remove the positive cable and charge the battery.
- Do not alter or change the wiring harness.
- Cold weather add ons should not be needed.

When cleaning machine, caution should be used around regulator area. Direct spraying of the regulator is not good. (Regulator should be covered or protected if direct spraying will happen). Excessive water pressure may also loosen wire connections or start terminals corroding. After cleaning, all terminals should be dried if wet and connections checked for proper seating.

STORAGE

1. Store the roller on level ground with drums blocked and parking brake on.

2. Remove the key. Operations of roller by untrained persons could result in personal injury.

3. In freezing climates, drain the water from the water tank, sprinkler tubes and drums.

4. During extended storage, drums should be coated with any type of oil or grease to prevent rusting.

5. Storage instructions for the engine are stated in the Engine Manual and should be carried out.

TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
Engine Won't Start	Forward/Reverse lever not in neutral position.	Place lever in neutral position.
	Battery not fully charged.	Charge or replace.
	Loose battery or starter cables.	Check and tighten.
	Faulty engine starting circuit.	Check appropriate section in Engine Manual
	Faulty or improperly adjusted neutral interlock switch.	Make sure neutral switch is adjusted properly and wires are all secured. Test with ohmmeter. Readjust neutral switch. Replace if defective.
	Dirty fuel injectors. (Diesel Only)	Clean or replace.
	Petcock plugged.	Clean or replace.
Engine won't start but cranks over.	Low on fuel.	Add fuel.
	Fuel valve closed.	Open.
	Fuel filter plugged.	Check fuel filter, replace if necessary.
	Spark plug wire (2) disconnected. (Gas Only)	Connect.
	Spark plug fouled. (Gas Only)	Clean or replace.
	No spark at plug. (Gas Only)	Check engine ignition system in Engine Manual.
		Service or replace.
		Clean or replace.
		Disengage.

TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
Engine starts but does not keep running.	Water/dirt in fuel.	Drain fuel system.
	Choke remains on. (Gas Only)	Adjust choke cable. Clean choke linkage.
	Carburetor improperly adjusted. (Gas Only)	Adjust as per Engine Manual.
	Dirty fuel injectors. (Diesel Only)	Service or replace.
	Injection pump drawing in air. (Diesel Only)	Check fuel lines or replace.
Roller won't move forward or reverse.	Objects in front of drums.	Remove.
	Unit in bypass.	Check bypass valve.
	Loose or broken forward/reverse linkage.	Readjust linkage or replace worn arm linkage.
	Loose or broken chain.	Make sure chain is on sprocket. Adjust tension or replace if chain shows excessive war.
	Loose or broken transmission belts.	Replace and/or tighten.
	Low hydraulic oil.	Check oil level gauge. Add if required.
Unit lacks power moving forward--but okay in reverse or vice versa.	Improperly adjusted forward/ reverse linkage.	Adjust linkage so that lever travel is the same in either direction from neutral.
Unit lacks power.	Engine not properly warmed up.	Idle before operating to achieve operating temperature.
	Low hydraulic oil level.	Add.
	Plugged hydraulic filter.	Replace.
	Insufficient belt tension.	Check and adjust belts.
	Engine RPM too low.	Check throttle linkage for proper actuation (3100 RPM Gas/2600 Diesel). See Maintenance.

TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
Unit lacks power.	Dirty fuel filter.	Replace.
	Dirty fuel injectors.	Service or replace.
	Injection pump drawing in air.	Check fuel lines or replace.
	Too much oil in crankcase.	Drain and check. Service or replace.
	Air filter dirty.	Clean and/or replace.
	Faulty hydraulic pump or drive motor.	Test hydraulic pressure, gas 3000 PSI/diesel 2250 PSI, at full load on drive motor with engine at full RPM.
		Replace pump if pressure is not in specified range in hydraulic motor drive circuit.
		Replace drive motor if measured pressure is correct.
	Bearings seized up.	Check drums for resistance.
Oil Consumption	Too much oil in crankcase.	Drain
	Loose oil filter or sending unit.	Tighten
	Loose bolts.	Tighten
Blue Smoke	Worn valves.	Replace
	Worn cylinder & piston rings.	Replace
	Too much oil in crankcase.	Drain--fill to proper level
Overheated	Crankcase oil level low.	Fill to proper level
	Restricted exhaust.	Clean or replace
	Cooling Fins dirty.	Clean
	Defective injector (Diesel Only).	Replace

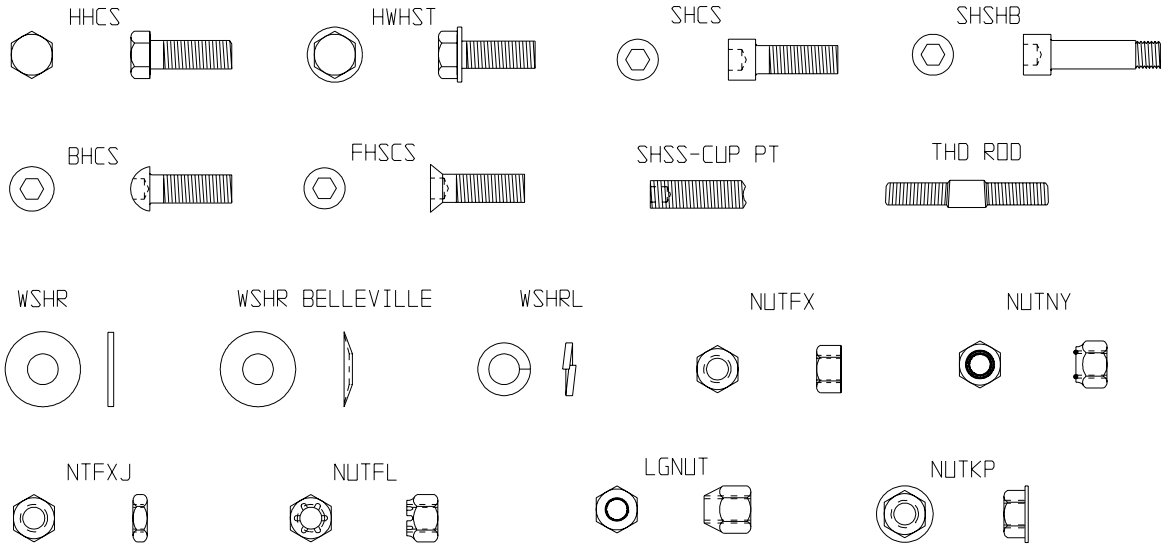
TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
Unit won't steer	Cylinder--leaking.	Replace hydraulic cylinder
	Piston rod bent.	Replace hydraulic cylinder
	Missing hydraulic cylinder pin.	Replace
	Kinked or broken hoses.	Replace
	Low hydraulic fluid.	Add fluid
	Faulty hydraulic pump.	Check hydraulic steering circuit for maximum pressure of 800 psi at full rpm. Replace or repair by authorized Service Center.
Brakes don't hold properly	Brakes not adjusted.	Adjust by turning knob at end of brake lever, handle or additional adjustment required at star wheel.
	Loose or broken brake cable.	Make sure cable is secure. Replace if necessary.
	Brake shoes worn out.	Replace.
Asphalt sticks to roller	Insufficient water supply on drums.	Fill tank and adjust flow.
		Check and clean sprinkler tubes.
		Check and clean water tank.
		Check hoses for kinks or dirt.
		Urethane scrapers not making contact allowing water to leak past. Adjust or replace if necessary.
		Sand/replace.

SERVICE RECORD

Service Record			
Model No.		Roller S/N:	Engine S/N:
Record Hours and Dates of Maintenance Below.			
Engine Oil and Filter Change			
Air Cleaner Service			
Fuel Filter			
Spark Plugs			
Engine RPM			
Cooling System			
Valve Clearance			
Flywheel Brake			
Hydraulic Oil, Filter and Breather			
Grease Fittings			
Chain			
Fuel Tank/Strainer			
Fuel Lines			
Control Cables			
Water Tank/Sprinklers			
Eccentrics			
Engine Mounting			
Hardware			
Battery			
Charge System			
Diesel Belts, Injectors			

HARDWARE IDENTIFICATION



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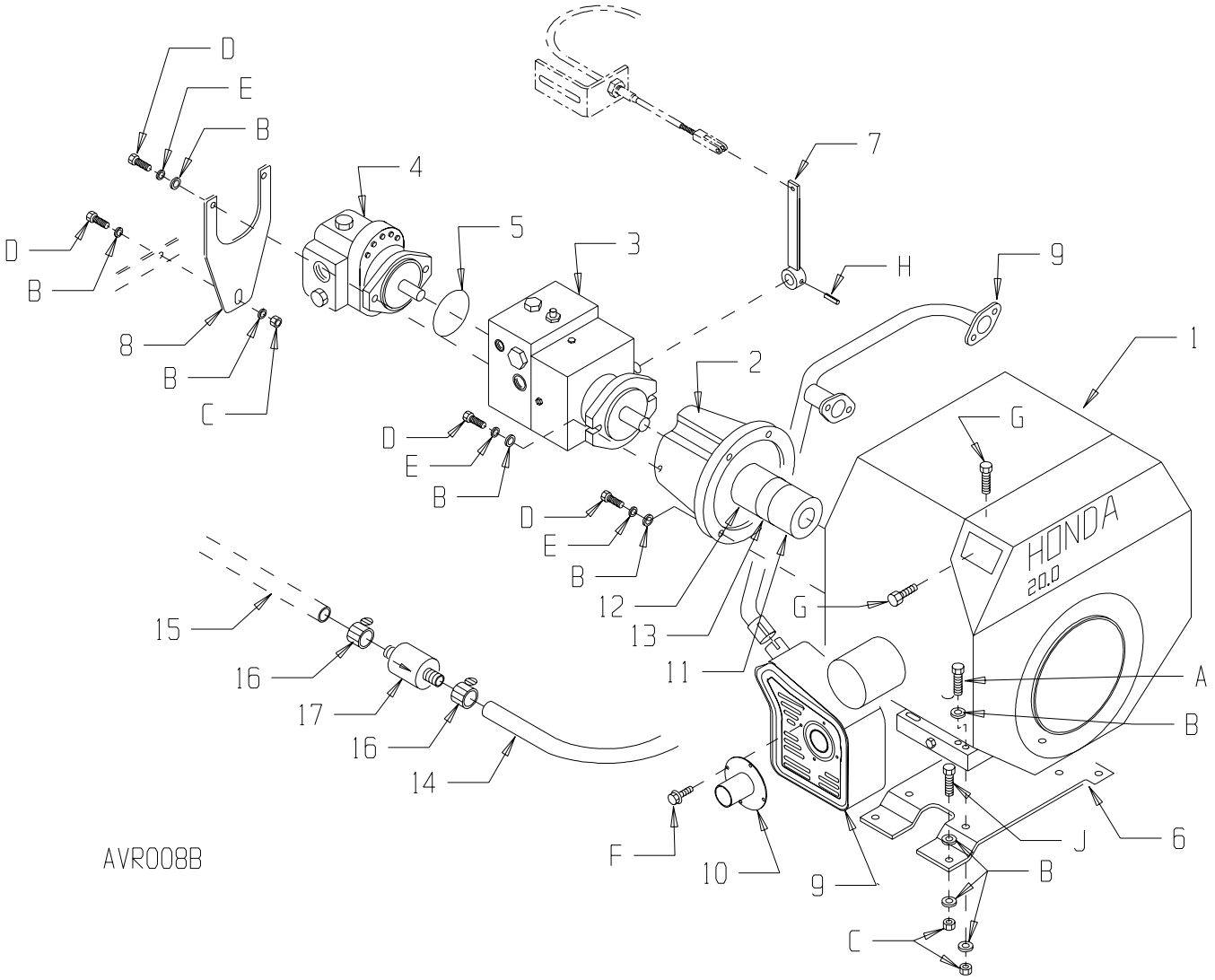
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PARTS LIST

Power Pak - Honda Gas

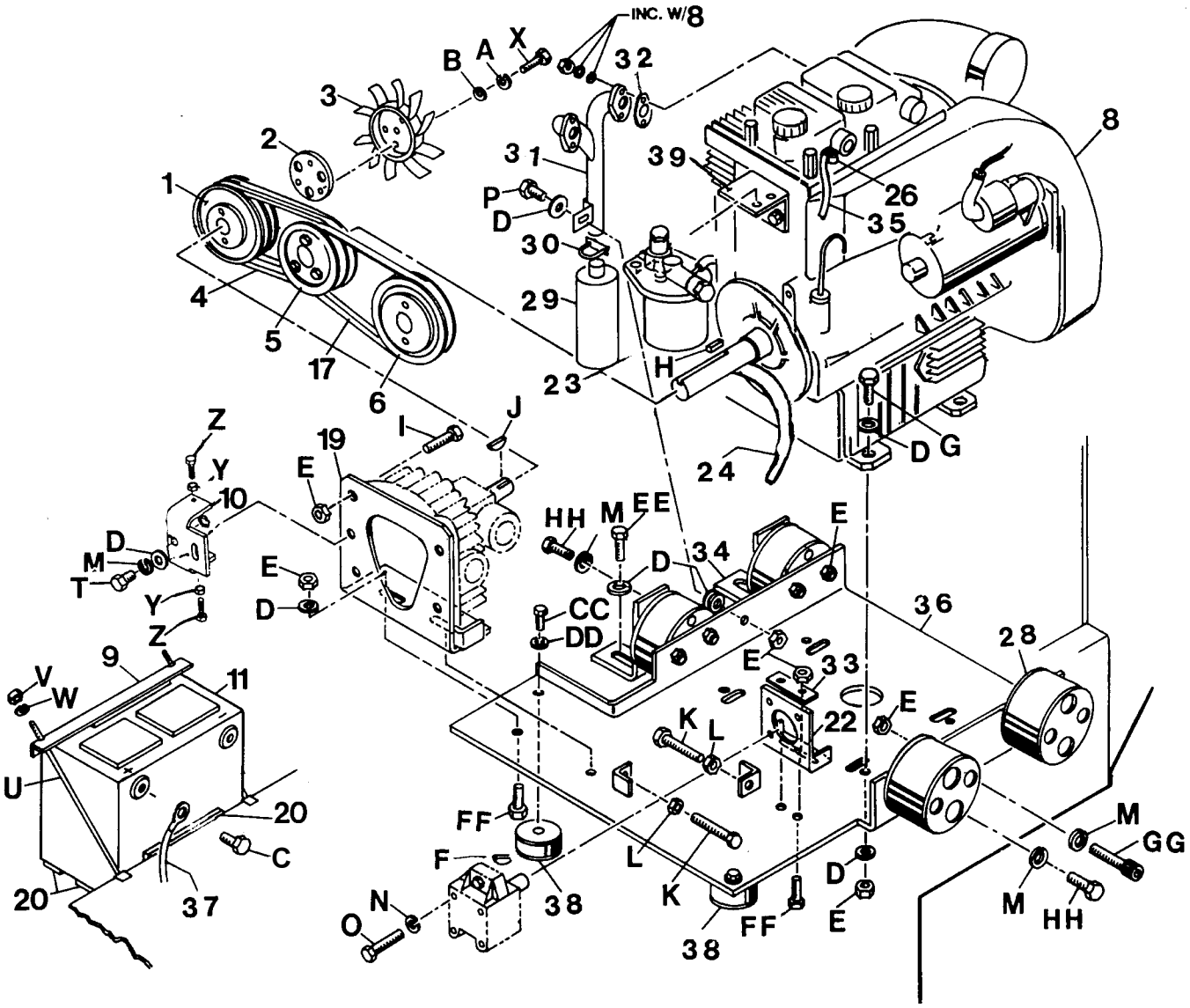
ITEM	PART NO.	DESCRIPTION	QTY.
1	43775	Engine 20HP Honda GX620	1
	56237	Manual Owners GX620	1
	56238	Manual Shop GX620	1
2	39093	Adaptor	1
3	39586	Pump Var. Disp.	1
4	39587	Pump Gear	1
5	47301	O-Ring 3-1/4ID x 1/16CS	1
6	43224-2	Mount Honda	1
7	43542-2	Lever Forward/Reverse Gas	1
8	43229-2	Support Pump	1
9	30562	Manifold Muffler Kit	1
#	39552	Cover Fuel Filter	1
10	43234-2	Tube Weld Exhaust	1
11	39094	Coupling Engine	1
12	39095	Coupling Pump	1
13	39096	Insert	1
14	46186	Fuel Line	4 ft.
15	46186	Fuel Line	1 ft.
16	34089	Clamp	4
17	38856	Filter	1

				TORQUE	
ITEM	PART NO.	DESCRIPTION	QTY.	FT. LBS.	Nm
A*	80179	HHCS 3/8-16 x 2 GR5 ZN	4	23	(31)
B	80342	WSHR 3/8 SAE ZN	10	-	-
C	80056	NUTNY 3/8-16 ZN	5	-	-
D*	80476	HHCS 3/8-16 x 1-1/2 GR5 ZN	9	23	(31)
E	80058	WSHRL 3/8 Split ZN	8	-	-
F	80936	HWHST M4 x 10mm	4	-	-
G	80890	HHCS M5 x 30 8.8 ZN	2	-	-
H	80775	PINSP ¼ x 1-1/4 ZN	1	-	-
J*	80145	HHCS 3/8 - 16 x 1-1/4 GR5 ZN	4	23	31

Not Shown

* Loctite Required

PARTS LIST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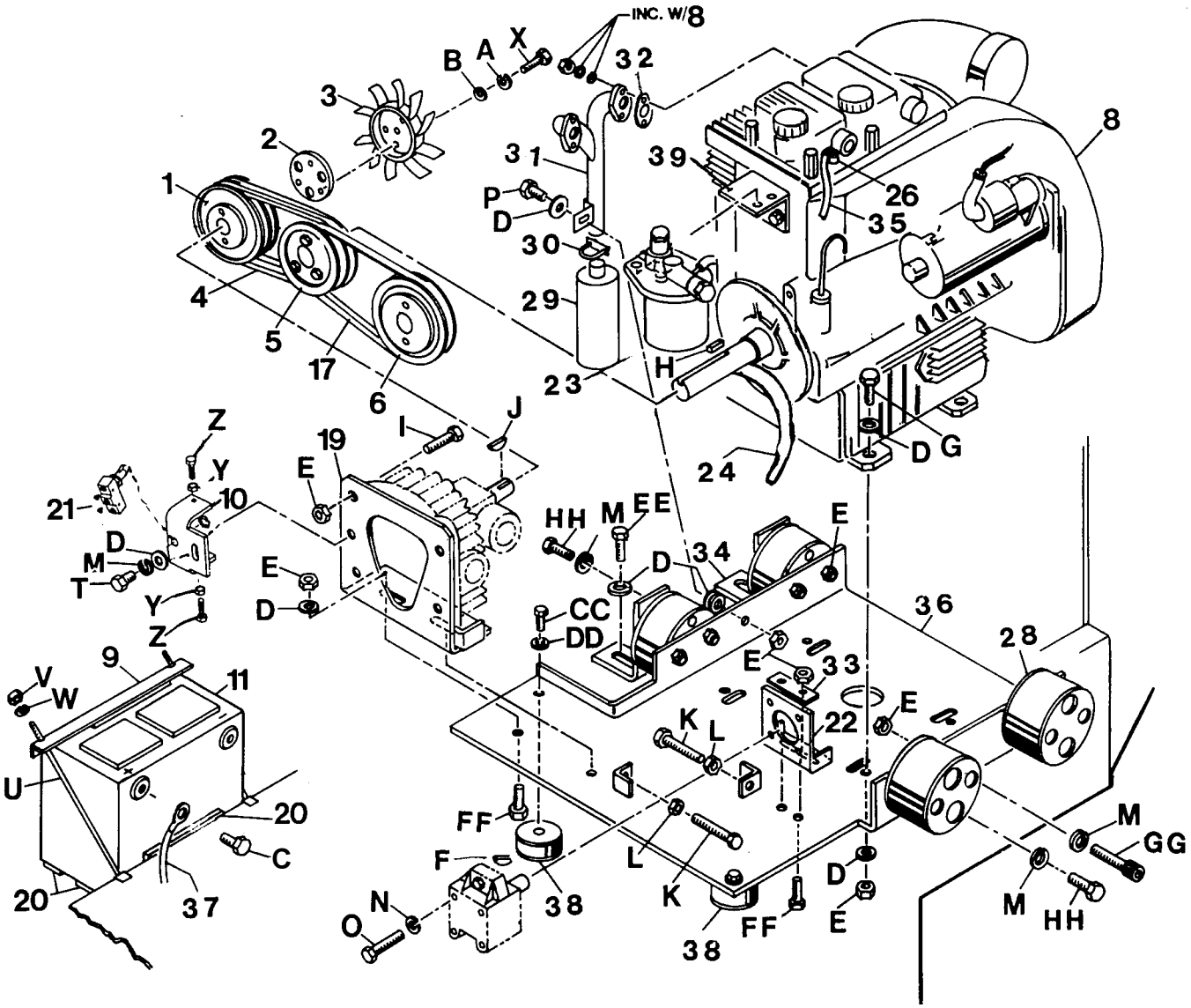
PARTS LIST

Power Pak - Deutz Diesel

ITEM	PART NO.	DESCRIPTION	QTY.	TORQUE FT. LBS.	TORQUE Nm
1	38467	SHV 3V 2 GR 4.12 x3/4	1	7.5	5.5
2	29353	SPCR FAN MTG	1	-	-
3	35936	FAN HYD 7 IN 10 BLDCCW	1	-	-
4	38470	BELT 3V x 280	2	-	-
5	38075	SHV 3V 3GR 4 12 x 1-7/16	1	7.5	5.5
6	39573	SHV 13V47 x 3/4	1	7.5	5.5
8	30253	ENGINE DIESEL	1	-	-
9	28543-2	CLAMP BATTERY	1	-	-
10	29758-2	BRKT WELD NEUT SW	1	-	-
11	38543	BATTERY	1	-	-
12	38483	FILTER OIL DIESEL	1	-	-
17	38499	BELT 3V x 250	1	-	-
20	47244	RBR 60 DURO 1.5 x 6.75	5	-	-
22	43007-2	BRKT WELD ECC PUMP	1	-	-
23	38501	FILTER FUEL	1	-	-
24	46186	HOSE LOW PRESS 1/4 ID	31”	-	-
26	34089	CLAMP HOSE	4	-	-
28	47203	SHOCK MTG	4	-	-
29	38644	MUFFLER NELSON	1	-	-
30	38646	CLAMP MUFFLER 1-1/4	1	-	-
31	38645	MANIFOLD NELSON	1	-	-
32	38647	GASKET MANIFOLD	2	-	-
33	29604-2	PLT SPRT PUMP BRKT	1	-	-
34	29459-2	BRKT MTG DECK	2	-	-
35	46186	HOSE FUEL LINE .25 OD	18”	-	-
36	29461-2	DECK WELD	1	-	-
38	29609	SHOCK MTG MODIFY	2	-	-
39	29462-2	BRACKET MTG FILTER	1	-	-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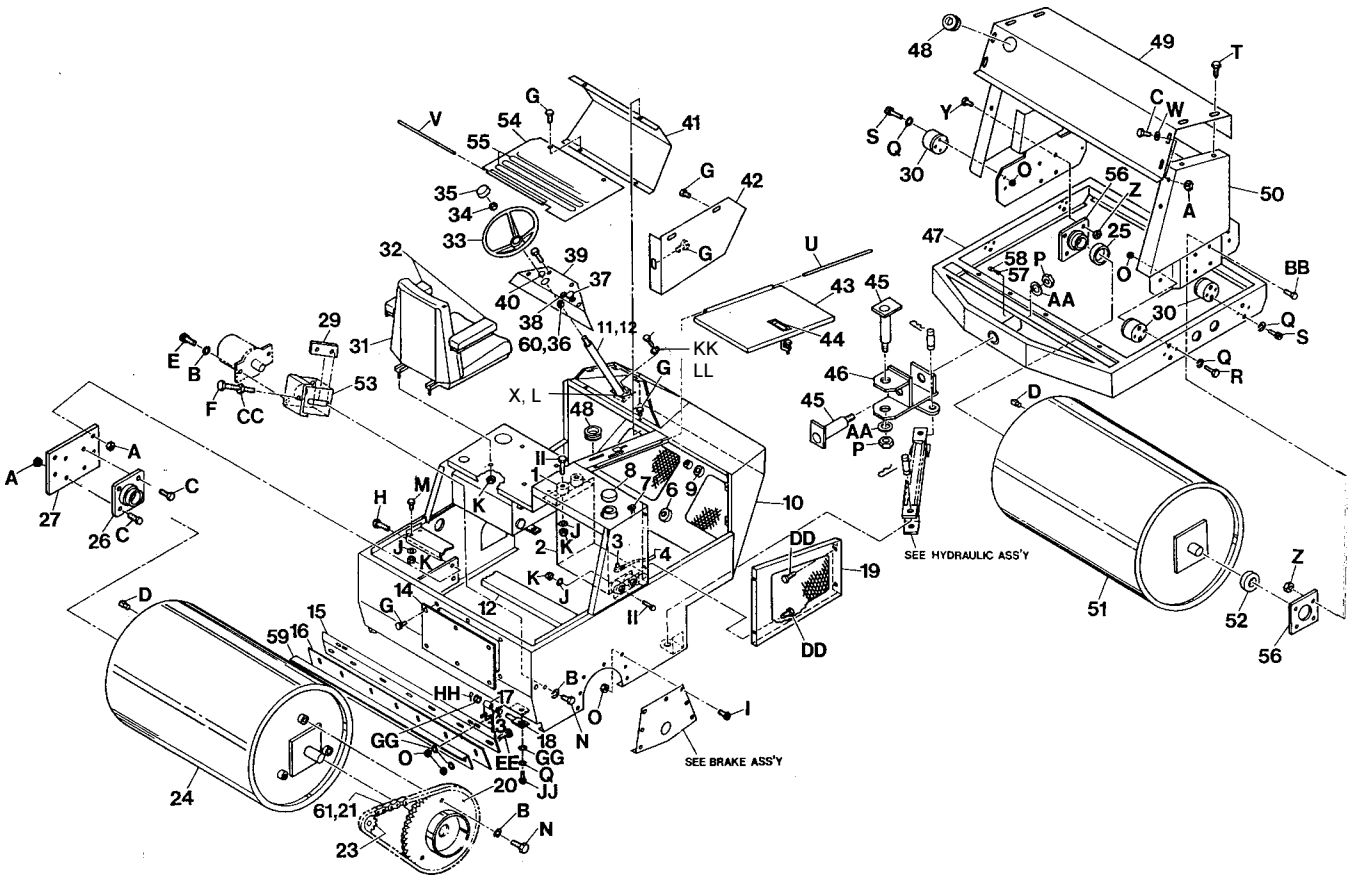
PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY.	TORQUE FT. LBS.	TORQUE Nm
A	80116	WSHRL 1/4 MED SPLIT	3	-	-
B	80347	WSHR 1/4 WROT	3	-	-
C	39355	SET BOLT BATTERY	1	-	-
D	80342	WSHR FLAT 3/8 SAE	16	-	-
E	80056	NUTNY 3/8 - 16	21	23	31
F	39221	KEY EATON PUMP	1	-	-
G*	80145	HHCS 3/8 - 16 x 1-1/4 GR5 ZN	4	23	31
H	80121	KEY 3/8 x 3/8 x 1-1/2 (incl.w/#5)	1	-	-
I*	80181	HHCS 3/8 - 16 x 2-1/2 GR5 ZN	4	23	31
J	80444	KEY #9 WOODRUFF	1	-	-
K	80540	HHTB 3/8 - 16 x 3 GR5	2	23	31
L	80042	NUTFX 3/8 - 16	2	23	31
M	80058	WSHRL 3/8 MED SPLIT	19	-	-
P*	80174	HHCS 3/8 - 16 x 1 GR8 ZN	2	23	31
T*	80374	HHCS 3/8 - 16 x 3/4	1	23	31
U	80630	THDRD 5/16 - 18 x 10 1/2	2	-	-
V	80114	NUTNY 5/16 - 18	2	13	18
W	80348	WSHR 5/16 WROT USS	2	-	-
X*	80154	HHCS 1/4 - 20 x 1-1/4	3	6	8
Y	80246	NUTKP 5/16 - 18	2	13	18
Z*	80451	HHTB 5/16 - 18 x 1-1/4	2	-	-
CC*	80378	HHCS 1/2 - 13 x 1ZN	2	57	77
DD	80117	WSHR 1/2 MED SPLIT	2	-	-
EE*	80610	HWHST 3/8 - 16 x 1-1/2	4	23	31
FF*	80615	HHTB 3/8 - 16 x 1-1/2	4	23	31
GG*	80539	SHCS 3/8 - 16 x 2-1/2	8	23	31
HH*	80470	HHCS 3/8 - 16 x 1 GR5 ZN	8	23	31

*Loctite Required

PARTS LIST

Frame Assembly



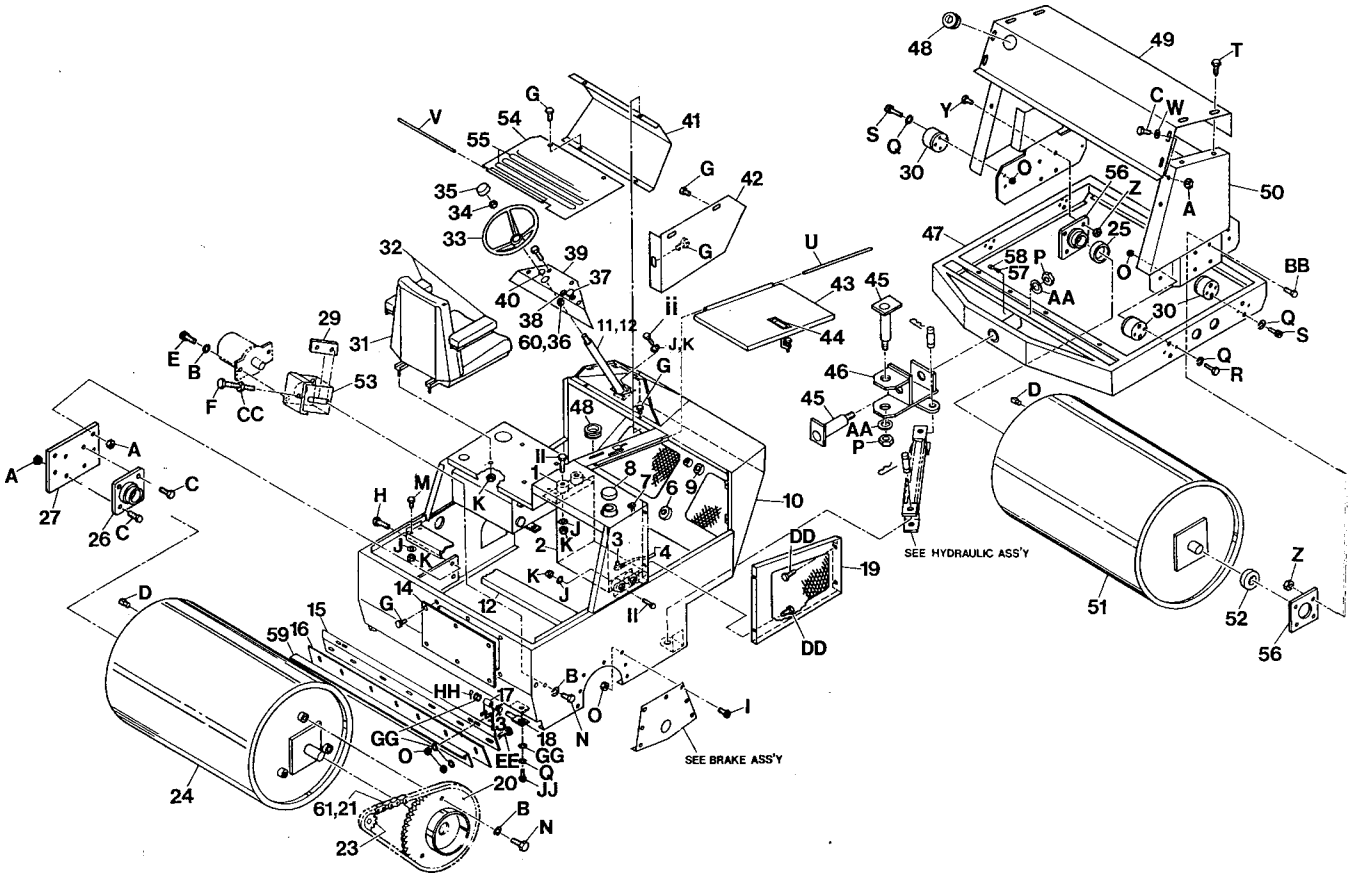
PARTS LIST

Frame Assembly

ITEM	PART NO.	DESCRIPTION	QTY.
1	37009	Shock Mtg	4
2	43221-2	Tank Weld Fuel - Gas/Diesel	1
	38147	Plug 1/8 NPT Hex HD	1
3	46009	Pet Cock	1
4	46186	Hose Low Press 1/4 ID - Gas	3”
6	47246	Grommet RBR 1” ID x 1.25 GD	1
7	46365	Ftg Hyd EL 1/8 NPT x 1/4 H - Diesel	1
8	38210	Cap Fuel	1
9	47257	Grommet RBR .69 ID x 1.00 GD	1
10	43226-2	Frame Weld Main Gas/Diesel	1
11	46655	Column Steering	1
12	43118-2	Plate Steering	1
13	37191	Spr Pkg Gibson 1164-2 Red	2
14	29360-2	Plt Cover Door Mtr	1
15	29388-2	Plt Scraper	4
16	29010	Scraper Slotted Urethane	4
17	29395-2	Pivot Scraper	8
18	29389-2	Rod Weld Scraper	8
19	29611-2	Pnl Weld Side Access	1
20	42685-2	Sprkt Weld 72th	1
21	38153	Chain Set No. 80	1
	34536	Link Half no. 80	1
	34537	Link Connection No. 80	1
23	38151	Sprkt H8012 x 1.00	1
24	22849	Drum Weld Rear	1
25	29379	Spcr Drm Fnt LH	1
26	32232	Brg Ball Flg 1-1/2 ID	1
27	29025-2	Plt Brg Mtg LH Rear	1
28	22771	Kit Scraper Assy	4
29	29162-2	Adj Weld Drm Mtr	1
30	47203	Shock Mount	4
31	47195	Seat Assy	1
32	38143	Arm Rest (Set RH & LH)	1
33	41017	Wheel Steering	1
34	46656	Nut Wheel Steering	1
35	47401	Cap Wheel Steering	1
36	29745-2	Plate Access Air - Diesel	1
37	35456	Cable Choke - Gas	1
	41002	Cable Stop - Diesel	1

PARTS LIST

Frame Assembly Cont'd.



PARTS LIST

Frame Assembly Cont'd.

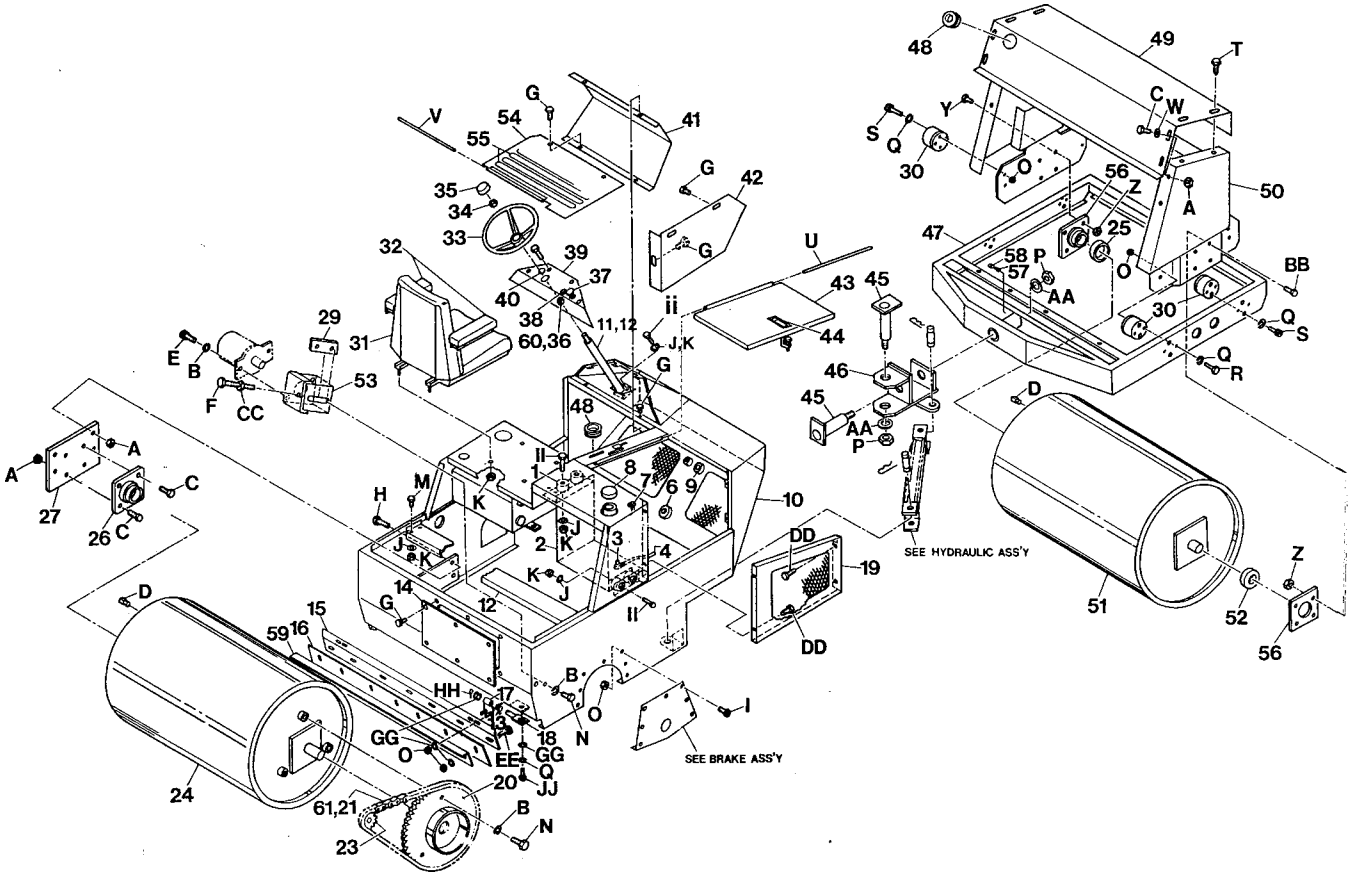
ITEM	PART NO.	DESCRIPTION	QTY.
38	34086	Clamp Hose - Diesel	1
39	43235-2	Panel Str Cover - Honda	1
	43236-2	Panel Str Cover - Diesel	1
40	36268	Hour Meter	1
41	29158-2	Pnl Flr Comfort Angle	1
42	43834-2	Pnl Flr Inside	1
	43836	Window Emission	1
	80908	PPHNS 10 - 24 x 3/4 ZN	4
	80693	NUTNY D-24 ZN	4
	80346	WSHR #10 SAE ZN	4
43	29001-2	Pnl Weld Top Access	1
44	38111	Latch Lvr Adj	1
45	22472-2	Pin Weld Pivot ART/OSC	2
46	22437-2	Hng Weld ART/OSC	1
47	22438-2	Frm Weld Frt	1
48	47247	Grommet Rubber 2" ID	2
49	29008-2	Cover Eccentric Housing	1
50	22475-2	Frame Weld Eccentric Housing	1
51	22531-2	Drum Weld Front	1
52	28986	Spacer Drum RH Front	1
53	22470-2	Mounting Weld Drum Motor	1
54	29228-2	Panel Weld Floor Access Battery	1
55	29298	Skid Tread Mod	1
56	32236	Bearing Ball Flg 2" ID	2
57	46042	Fitting 1641B	8
58	47001	Cap Plug Blue	8
59	29387-2	Backer Scraper	4

ITEM	PART NO.	DESCRIPTION	QTY.	TORQUE FT. LBS.	TORQUE Nm
A	80051	NUTNY 1/2 - 12	14	57	77
B	80117	WSHRL 1/2 MED SPLIT	9	-	-
C*	80089	HHCS 1/2 - 13 x 1-3/4 GR5 ZN	4	57	77
D	46172	PLUG PIPE 1 NPT SKT HD	4	-	-

* Loctite Required

PARTS LIST

Frame Assembly Cont'd.



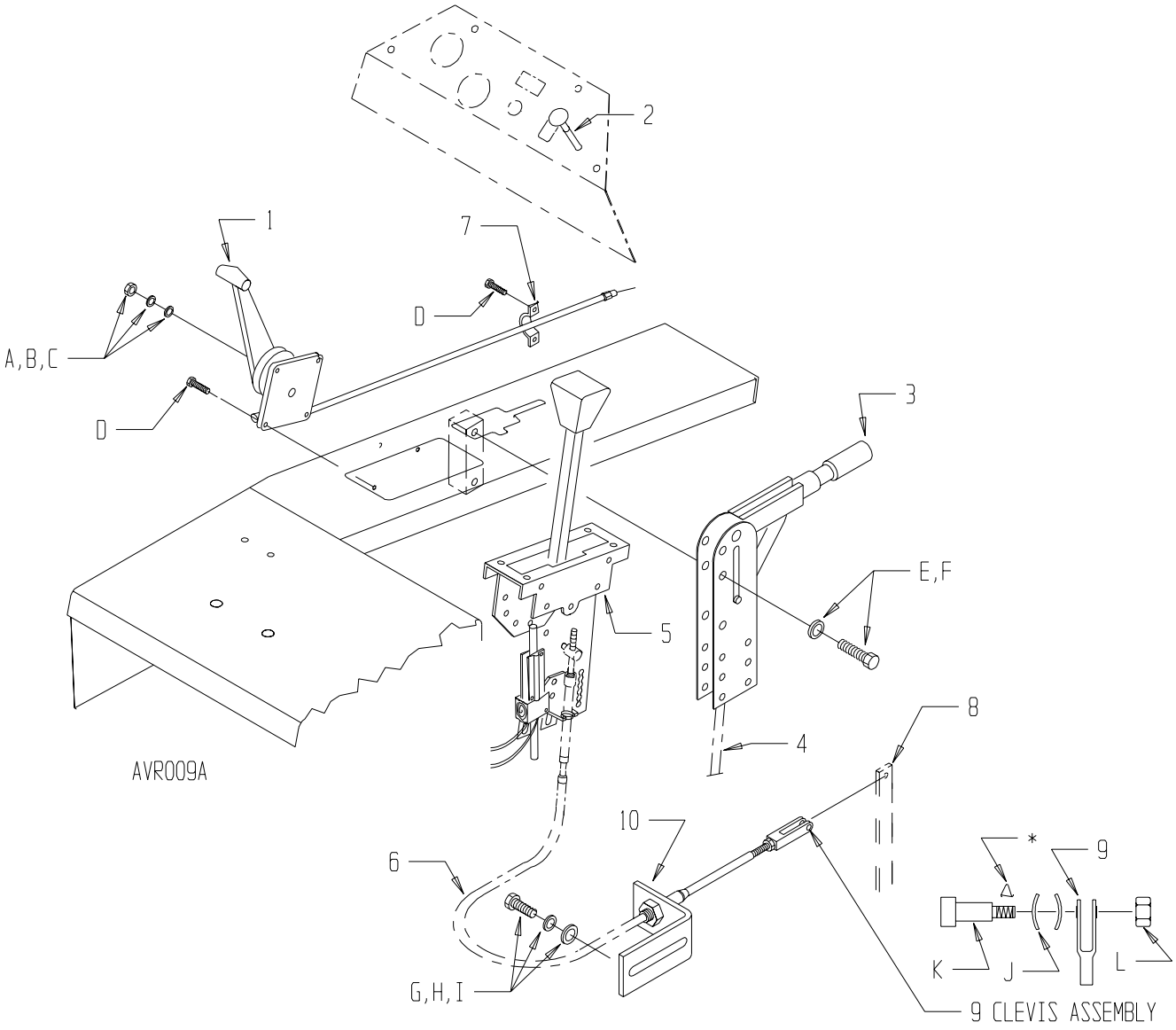
PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY.	TORQUE FT. LBS.	TORQUE Nm
E*	80569	SHCS 1/2 - 13 x 1-1/2 BLK	2	57	77
F	80551	HHTB 1/2 - 13 x 3 GR5 ZN	1	-	-
G*	80085	HWHTB 5/16 - 18 x 1 THDFR	13	13	18
H*	80578	HHCS 1/2 - 14 x 3 GR5 ZN	4	57	77
I*	80290	FHSCS 3/8 - 16 x 1-1/4 BLK	17	23	31
J	80348	WSHR 5/16 WROT ZN	4	-	-
K	80114	NUTNY 5/16 - 18 ZN	8	13	18
L*	80811	HHCS M6 x 25mm 8.8 ZN	4	18	24
M	80169	HHCS 5/16 - 18 x 2 GR5 ZN	2	18	24
N*	80561	HHCS 1/2 - 13 x 1-3/4 GR5 ZN	5	57	77
O	80056	NUTNY 3/8 - 16 ZN	51	23	31
P	80027	NUTFL 1-1/4 ZN	2	57	77
Q	80058	WSHRL 3/8 MED SPLIT	22	-	-
R*	80470	HHCS 3/8 - 16 x 1 GR5 ZN	8	23	31
S*	80539	SHCS 3/8 - 16 x 2-1/2 BLK	8	23	31
T	80031	HWHTB 1/2 - 13 x 1-1/2 THDFRM	4	57	77
U	29132	PIN HNG 3/16 x 19-1/2	1	-	-
V	29362	PIN HNG 3/16 x 18-1/4	1	-	-
W	80125	WSHR 17/32 x 1-1/16	6	-	-
X	80860	WSHRL M6 SPLIT ZN	4	-	-
Y*	80577	HHCS 5/8 - 11 x 2 GR5 ZN	6	112	152
Z	80082	NUTNY 5/8 - 11 ZN	8	97	71
AA	80338	WSHR 1 IN WROT ZN	2	-	-
BB*	80585	SHCS 5/8 - 11 x 2 BLK	2	112	152
CC	80563	NUTJM 1/2 - 13ZN 1/2 HGTH	1	49	-
DD	80586	HWHTB 5/16 - 18 x 1/2	4	13	18
EE	80347	WSHR 1/4 WROT ZN	4	-	-
FF*	80587	CRBLT 3/8 - 16 x 1	28	-	-
GG	80043	WSHR 3/8 SAE	52	-	-
HH	80424	PINCT 1/8 x 3/4	8	-	-
II*	80163	HHCS 5/16 - 18 x 1-1/2	4	13	18
JJ*	80088	HHCS 3/8 - 16 x 1-1/4 GR8	8	23	31
KK*	80161	HHCS 5/16 - 18 x 1 GR5 ZN	4	13	18
LL	80086	WSHRL 5/16 SPLIT ZN	4	-	-

* Loctite Required

PARTS LIST

Control Levers



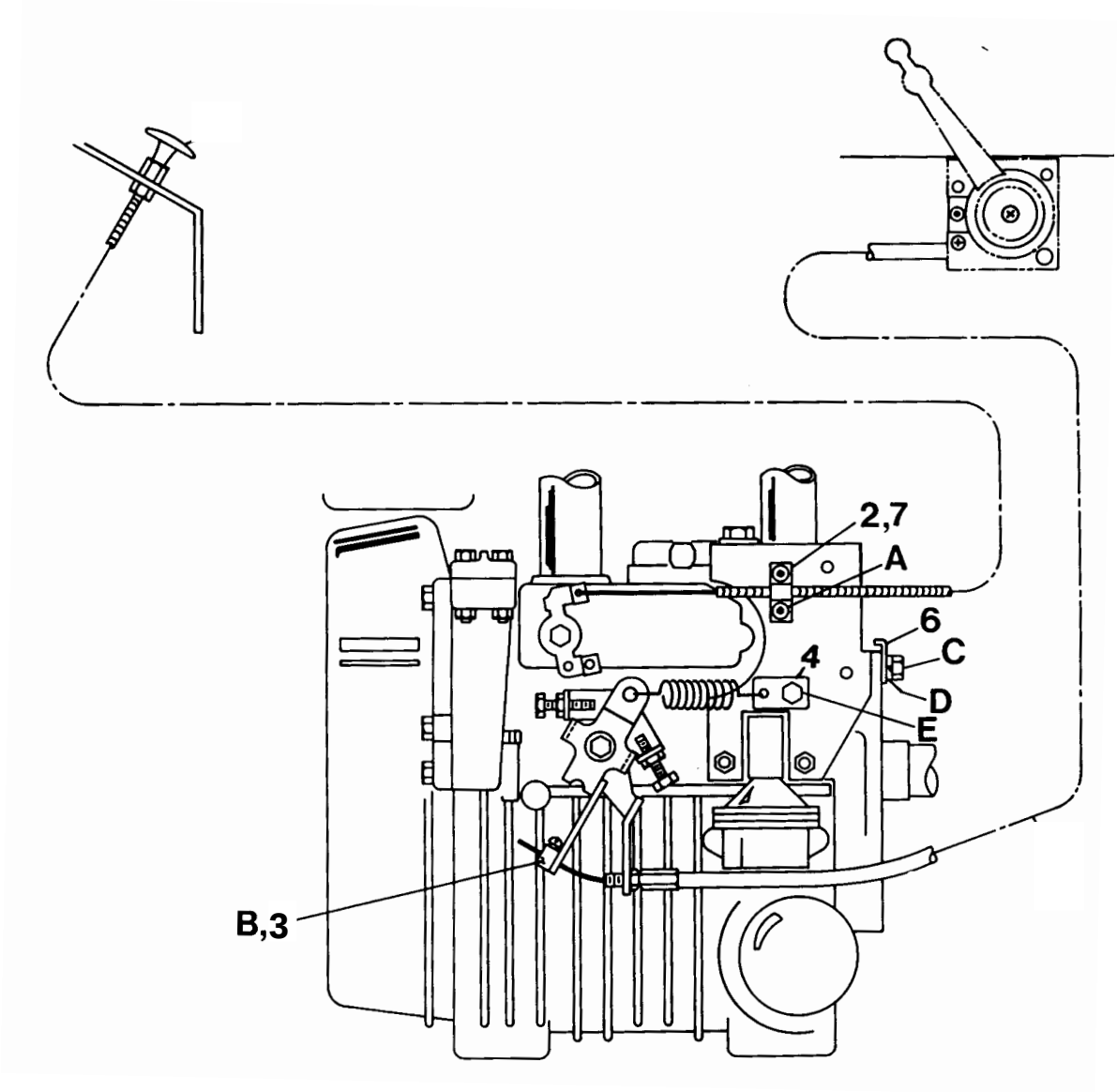
PARTS LIST

Control Levers

ITEM	PART NO.	DESCRIPTION	QTY.
1	39197	Throttle Assembly	1
	39202	Cable Assembly Throttle	1
2	35456	Cable Choke Gas	1
	41002	Cable Stop Diesel	1
3	38095	Brake Assembly	1
4	41003	Cable Assembly Brake	1
5	39097	Control Forward/Reverse	1
	39321	Switch Neutral/Backup	1
6	38602	Cable Forward/Reverse	1
7	41007	Clamp Cable	1
8	43542-2	Lever Forward/Reverse Gas	1
	43218-2	Lever Forward/Reverse Diesel	1
	80051	NUTNY 1/2-13 ZN Diesel	1
	80015	Key Woodruff Diesel	1
9	38561	Clevis	1
10	43219-2	Bracket Forward/Reverse Cable	1

				TORQUE	
ITEM	PART NO.	DESCRIPTION	QTY.	FT. LBS.	Nm
A*	80851	NUTNY M6	1	7	(10)
B	39203	WSHR Slotted	1	-	-
C	39204	WSHR Nylon	1	-	-
D	80461	HWHST 10-32 x ½	6	3	(4)
E*	80163	HHCS 5/16-18 x 1-1/2 GR5 ZN	4	13	(18)
F	80086	WSHRL 5/16 Split ZN	2	-	-
G*	80686	HHCS 3/8-16 x 3/4 GR8 ZN	2	23	(31)
H	80058	WSHRL 3/8 Split ZN	2	-	-
I	80043	WSHR 3/8 WROT ZN	2	-	-
J	80788	WSHR SPR 1/4 ID 1/2 OD SST	4	-	-
K	80771	SHSHB 1/4 x 5/8 ZN	2	-	-
L	80693	NUTNY 10-24 ZN	2	-	-

* Loctite Required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PARTS LIST

Cable Routing - Deutz Diesel

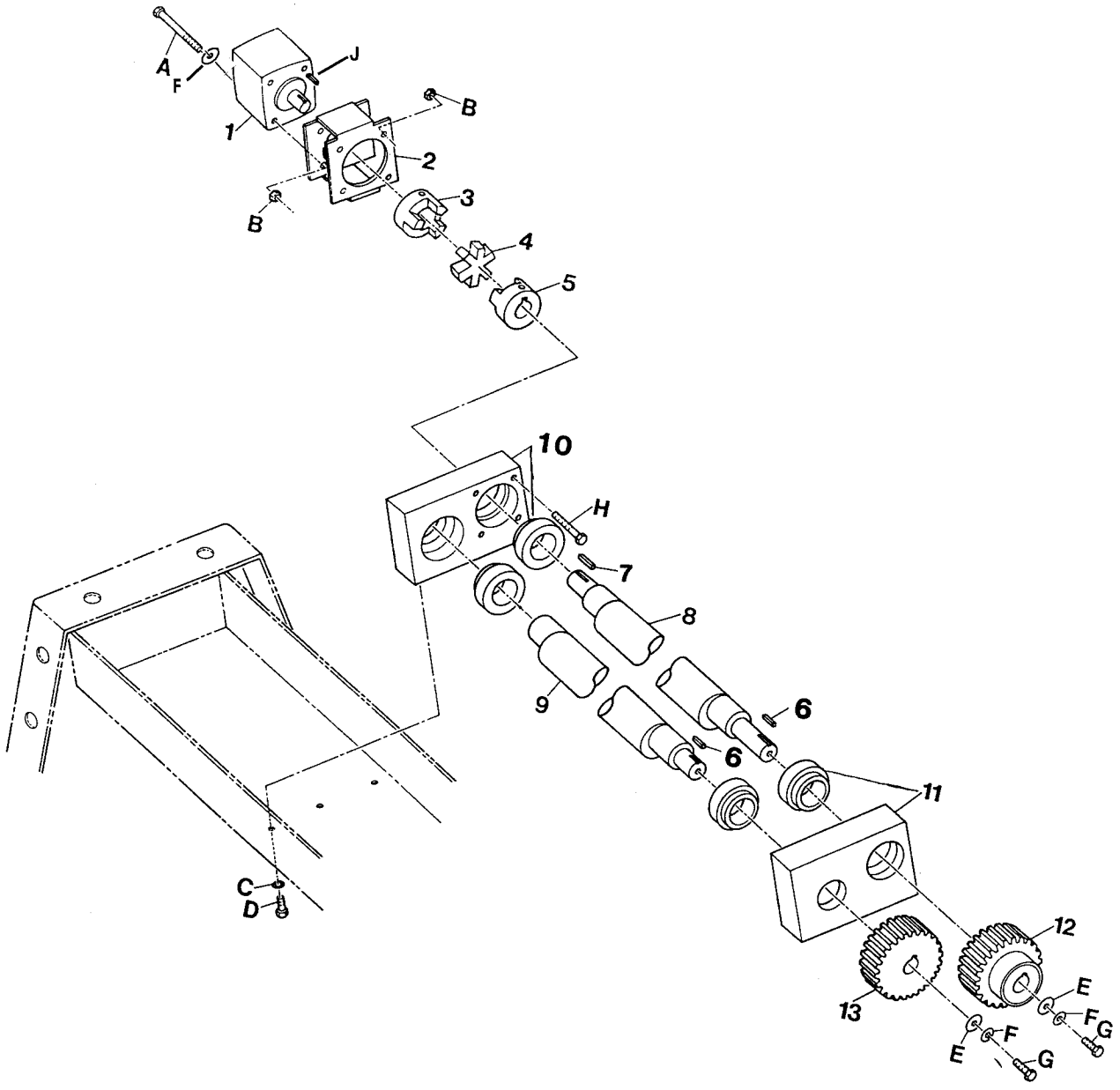
ITEM	PART NO.	DESCRIPTION	QTY.
1	41007	Clamp Conduit	1
2	29761	Clup Spring	1
3	41006	Collar Stop	1
4	29610	Bracket Guide Cable	1
5	47271	Heat Shrink	1

				TORQUE	
ITEM	**PART NO.**	**DESCRIPTION**	**QTY.**	**FT. LBS.**	**Nm**
A*	80461	HWHTB 10 - 32 x 1/2 THRDFRM	2	3	4
B*	80609	RHSMS 8 - 32 x 5/16 BLK	1	-	-
C*	80616	HHCS M10 x 16mm ZN	1	35	48
D	80058	WSHRL 3/8 MED SPLIT ZN	1	-	-
E*	80617	HHCS M6 x 16mm ZN	1	7	10

* Loctite Required

PARTS LIST

Eccentric Assembly



PARTS LIST

Eccentric Assembly

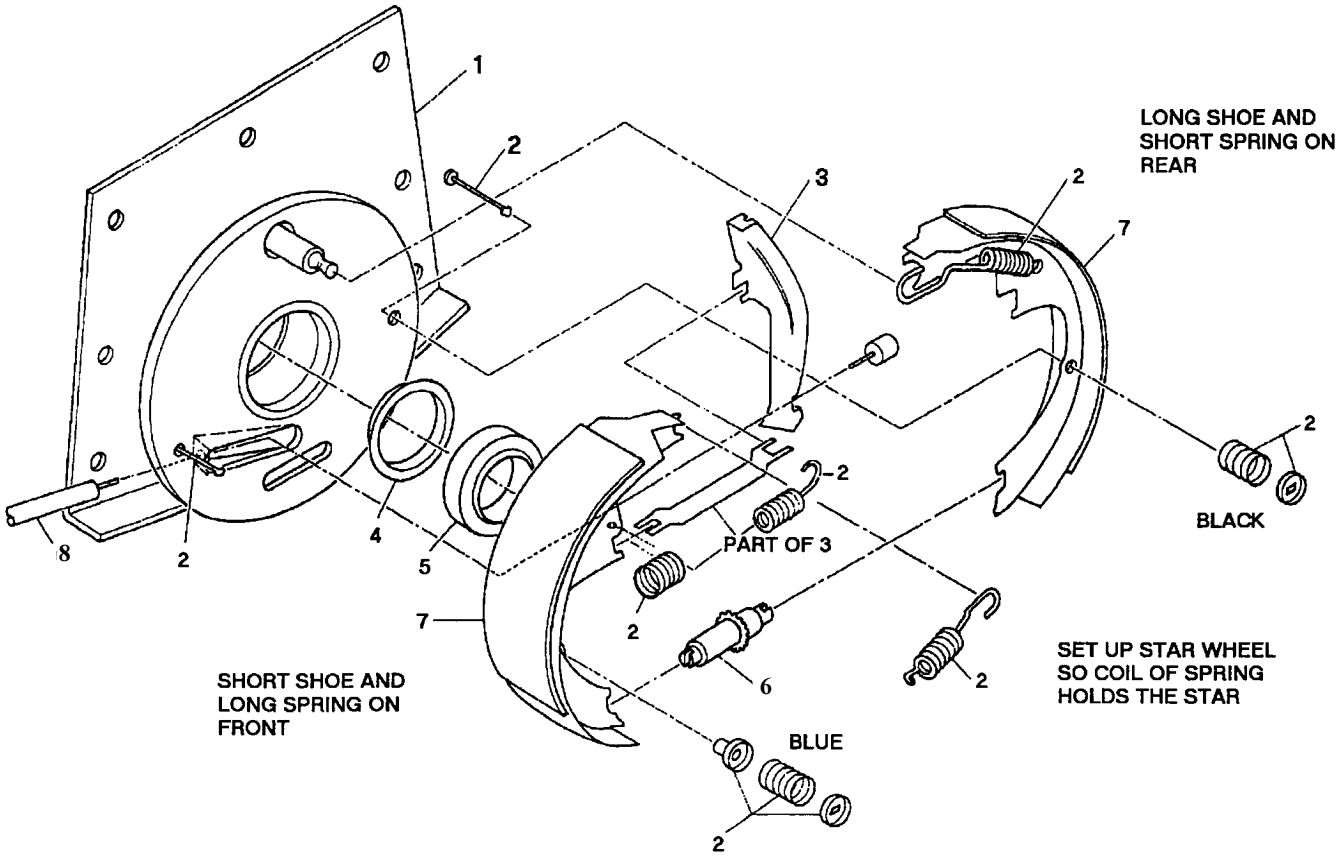
ITEM	PART NO.	DESCRIPTION	QTY.
1	39587	Motor AVR w/HI-PSI Seal	1
2	43003-2	Mtg Weld DM4	1
3*	39075	CPLG Jaw L-090 x .625	1
4	38081	Insert Sox L090	1
5*	38080	CPLG Jaw L-090 x .750	1
6	80593	Key Sq 1/4 x 1 Class 2	2
7	80595	Key Sq 3/16 x 1 Class 2	1
8	22527-2	Ecc Weld/Mach	1
9	22528-2	Ecc Weld/Mach	1
10	29341-2	Hsg Brg Ecc LH w/Brgs	1
11*	29342-2	Hsg Brg Ecc EH w/Brgs	1
12*	38077	Gear Stl Ecc	1
13*	38078	Gear Fib Ecc	1
**	22726	Kit Eccentric Assembly	1

				TORQUE	
ITEM	PART NO.	DESCRIPTION	QTY.	FT. LBS.	Nm
A*	80174	HHCS 3/8 - 16 x 1 GR5 ZN	2	23	31
B*	80114	NUTNY 5/16 - 18	8	13	18
C	80117	WSHRL 1/2 MED SPLIT ZN	6	-	-
D*	80104	HHCS 1/2 - 13 x 1-1/4 GR2	6	57	77
E	80564	WSHR 3/8 x 1-1/4	2	-	-
F	80058	WSHRL 3/8 MED SPLIT	4	-	-
G*	80686	HHCS 3/8 - 16 x 3/4 GR8 ZN	2	23	31
H*	80579	HHCS 5/16 - 18 x 2-1/4	4	13	18
J	39222	KEY EATON MOTOR	1	-	-

* Loctite Required
** Includes items 6-13

PARTS LIST

Parking Brake Assembly



PARTS LIST

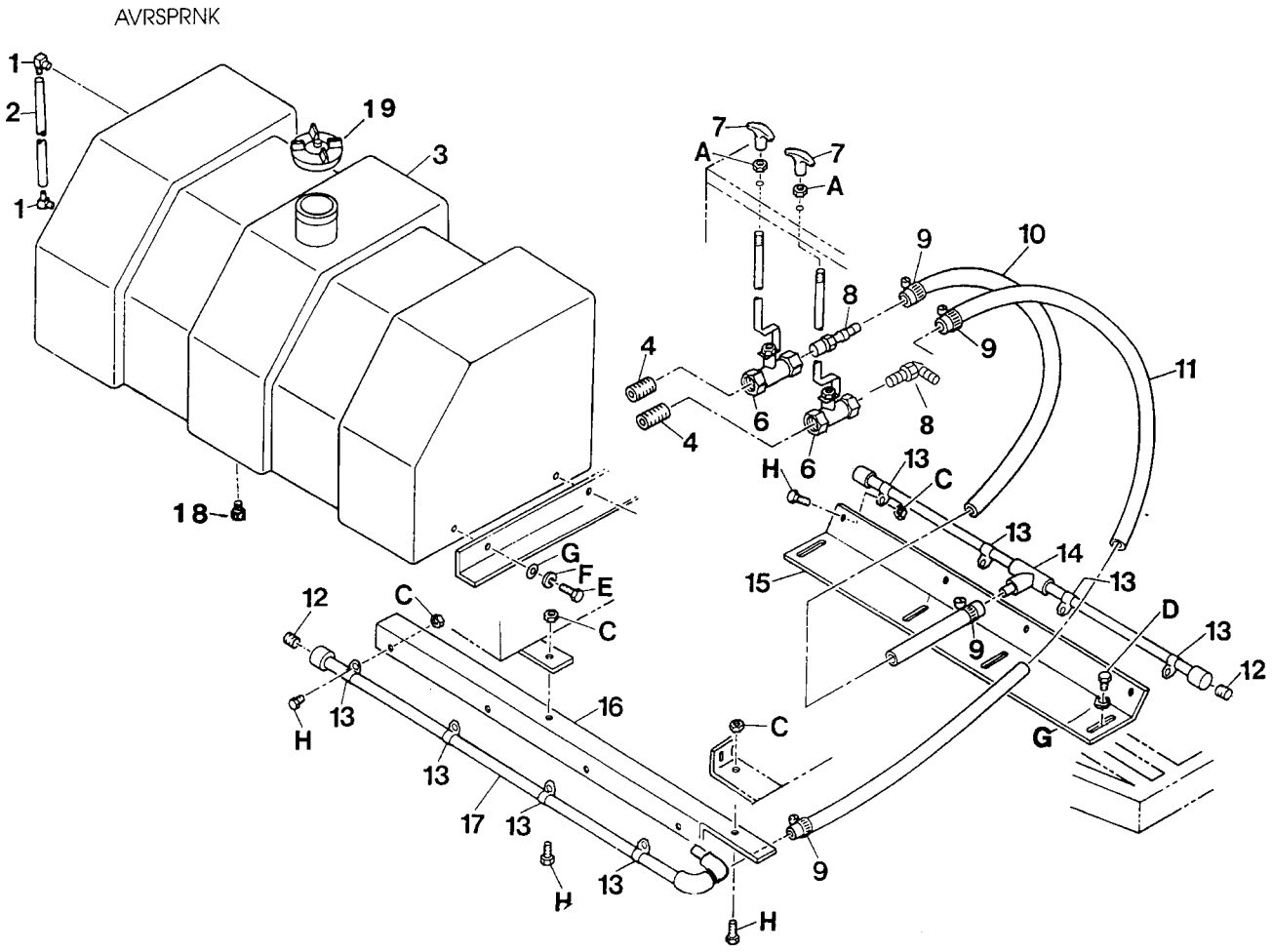
Parking Brake Assembly

ITEM	PART NO.	DESCRIPTION	QTY.
1	22441-2	Plt Weld Brake	1
2	22546	Kit Gibson Spr and Pin	1
3	38101	Lvr/Bar Prk Bk	1
4	28898-2	Cap Brg Brk Plt	1
5	32003	Bearing RA 108C2RSAW	1
6	38098	Star Wheel RH	1
7	22547	Shoe Brake Set	1
8	41003	Cable Assy Brake	1
#	22473	Kit Brake Assembly	1

Not Shown - Kit includes items 1-7

PARTS LIST

Water Tank/Sprinkler Assembly



PARTS LIST

Water Tank/Sprinkler Assembly

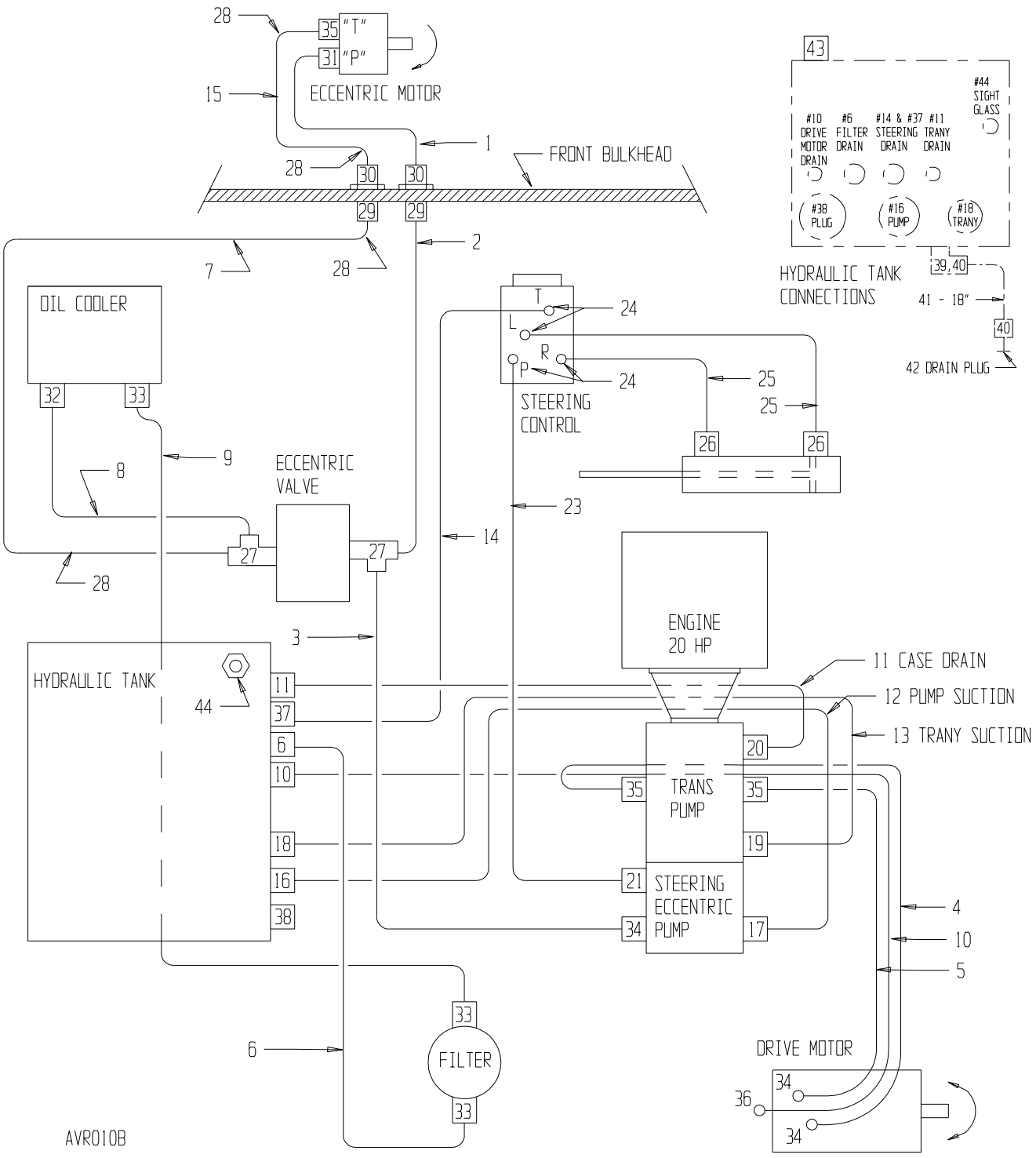
ITEM	PART NO.	DESCRIPTION	QTY.
1	34486	FTG 90 EL NPT x 1/4 BARB	2
2	47295	Hose Teflon	15”
3	47232	Tank Water	1
4	46141	Nipple 1/2 NPT x 4-1/2 LG	2
5	46725	FTG EL 90 1/2 NPT x 5/8H	1
6	29179-2	Valve/Rod Assy.	2
7	47242	Knob T-Handle	2
8	46725	FTG 90-1/2 NPT x 5/8H	2
9	35447	Clamp Worm Drive 1 IN NOM	4
10	90359	Hose Water Black 5/8ID	5’
11	9j0359	Hose Water Black 5/8ID	1’
12	46113	Pipe Plug 3/8	2
13	35448	Clamp 5/8 Rubber Loop	8
14	29169	Sprnk Assy Fnt	1
15	29173-2	Plt Sprnk Mtg Fnt	1
16	43230-2	Brkt Sprink Mtg Rear	1
17	43237	Sprnk Assy Rear	1
18	38797	Plug PVE 1-1/2 NPT	1
19	47241	Cap Plastic 3-1/2 WRT	1

				TORQUE	
ITEM	PART NO.	DESCRIPTION	QTY.	FT. LBS.	Nm
A	80042	NUTFY 3/8 - 16 ZN	2	23	31
C	80114	NUTNY 5/16 - 18 ZN	10	13	18
D*	80085	HWHTB 5/16 - 18 x 1 THDFRM	4	13	18
E	80145	HHCS 3/8 - 16 x 1-1/4 GR5 ZN	4	23	31
F	80058	WSHRL 3/8 MED SPLIT ZN	4	-	-
G	80342	WSHR FLAT 3/8 SAE ZN	8	-	-
H*	80161	HHCS 5/16 - 18 x 1 GR5 ZN	10	13	18
J*	80163	HHCS 5/16 - 18 x 1-1/2 GR5 ZN	2	13	18

* Loctite Required

PARTS LIST

Piping - Honda Gas



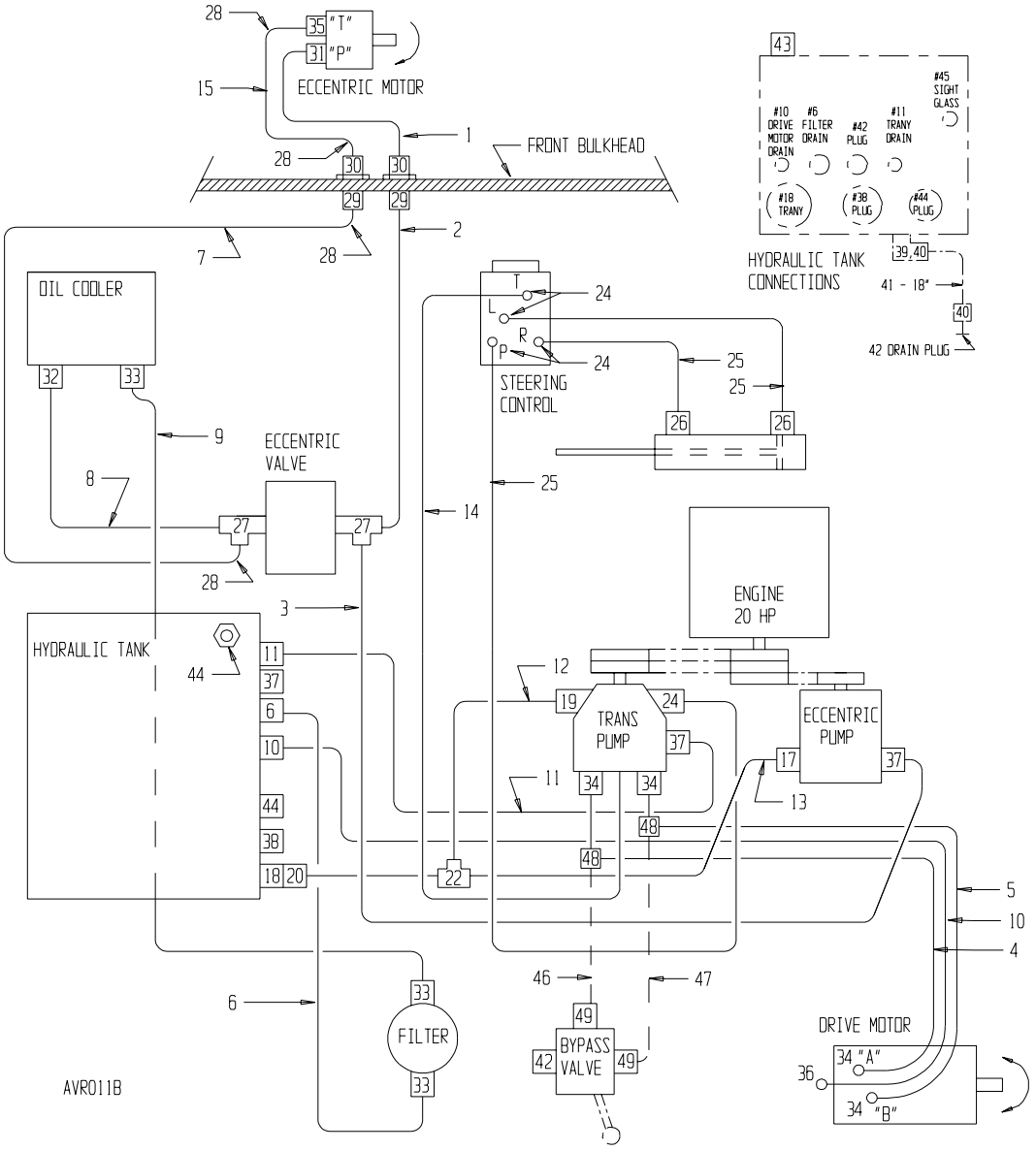
PARTS LIST

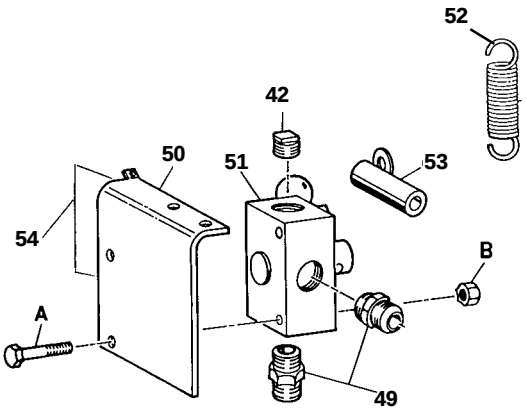
Piping - Honda Gas

ITEM	PART NO.	DESCRIPTION	QTY.
1	46775	HOSE 3/4 RJ9 x 3/4 RJ9 49"	1
2	46776	HOSE 3/4 RJ9 x 3/4 RJ9 33"	1
3	46777	HOSE 3/4 RJ4 x 3/4 FJ 19"	1
4	46778	HOSE 3/4 RJ9 x 3/4 RJ9 64"	1
5	46779	HOSE 3/4 RJ9 x 3/4 RJ4 42"	1
6	46780	HOSE 1/2 NPT x 3/4 JSW 18 1/2"	1
7	46781	HOSE 3/4 JSW x 3/4 JSW 56"	1
8	46782	HOSE 3/4 JSW x 3/4 JSW 28"	1
9	46783	HOSE 3/4 JSW x 3/4 JSW 48"	1
10	46784	HOSE 3/8NPT x 9/16FJ 78"	1
11	46785	HOSE 3/8 NPT x 34"	1
	46819	CLAMP HOSE 5/8"	1
12	46786	HOSE 1" LOW PRESS 36"	1
	46817	CLAMP HOSE 1 1/2"	2
13	46787	HOSE 3/4" LOW PRESS 34"	1
	46818	CLAMP HOSE 1"	2
14	46788	HOSE 9/16FJ 9/16RJ9 56"	1
15	46789	HOSE 3/4 JJW x 3/4 JSW 47"	1
16	46790	FTG EL 90 3/4NPT x 1" HOSE	1
17	46791	FTG EL 90 1-5/16OR x 1" HOSE	1
18	46792	FTG EL 90 1/2NPT x 1/2" HOSE	1
19	46793	FTG EL 90 3/4OR x 1/2" HOSE	1
20	46794	FTG EL 90 9/16OR x 3/8" HOSE	1
21	46816	FTG EL 45 9/16J 3/4OR	1
23	46658	HOSE 9/16FJ x 9/16 FJ 52"	1
24	46115	FTG STR 9/16J 9/16OR	4
25	46657	HOSE 9/16FJ x 9/16RJ 70"	2
26	46181	FTG STR 9/16J 3/8NPT	2
27	46795	FTG TEE 3/4OR X 3/4J x 3/4J	2
28	46123	FTG EL 90 3/4J x 3/4JSW	4
29	46796	FTG LONG 3/4J x 3/4J	2
30	46797	NUT HYD 3/4JIC	2
31	46324	FTG EL 90 3/4J 1-1/16OR	1
32	46327	FTG STR 3/4NPT 3/4J	1
33	46331	FTG EL 90 3/4J 3/4NPT	3
34	46197	FTG STR 3/4J 7/8OR	3
35	46647	FTG STR 3/4J x 1-1/16OR	3
36	46182	FTG EL 90 9/16J 7/16OR	1
37	46174	FTG STR 9/16J 1/2NPT	1
38	46798	PLUG HYD 2"NPT HEX HD ZN	1
39	46112	FTG EL 90 1/2MPT x 1/2 FPT	1
40	46132	FTG STR 1/2NPT 5/8H-BARB	1
41	46803	HOSE 5/8 x 18"	1
42	46107	PLUG 1/2 NPT SQ HD BLK	1
43	46173	PLUG 3/4 NPT SQ HD ZN	1
44	46172	SIGHTGLASS	1

PARTS LIST

Piping - Deutz Diesel

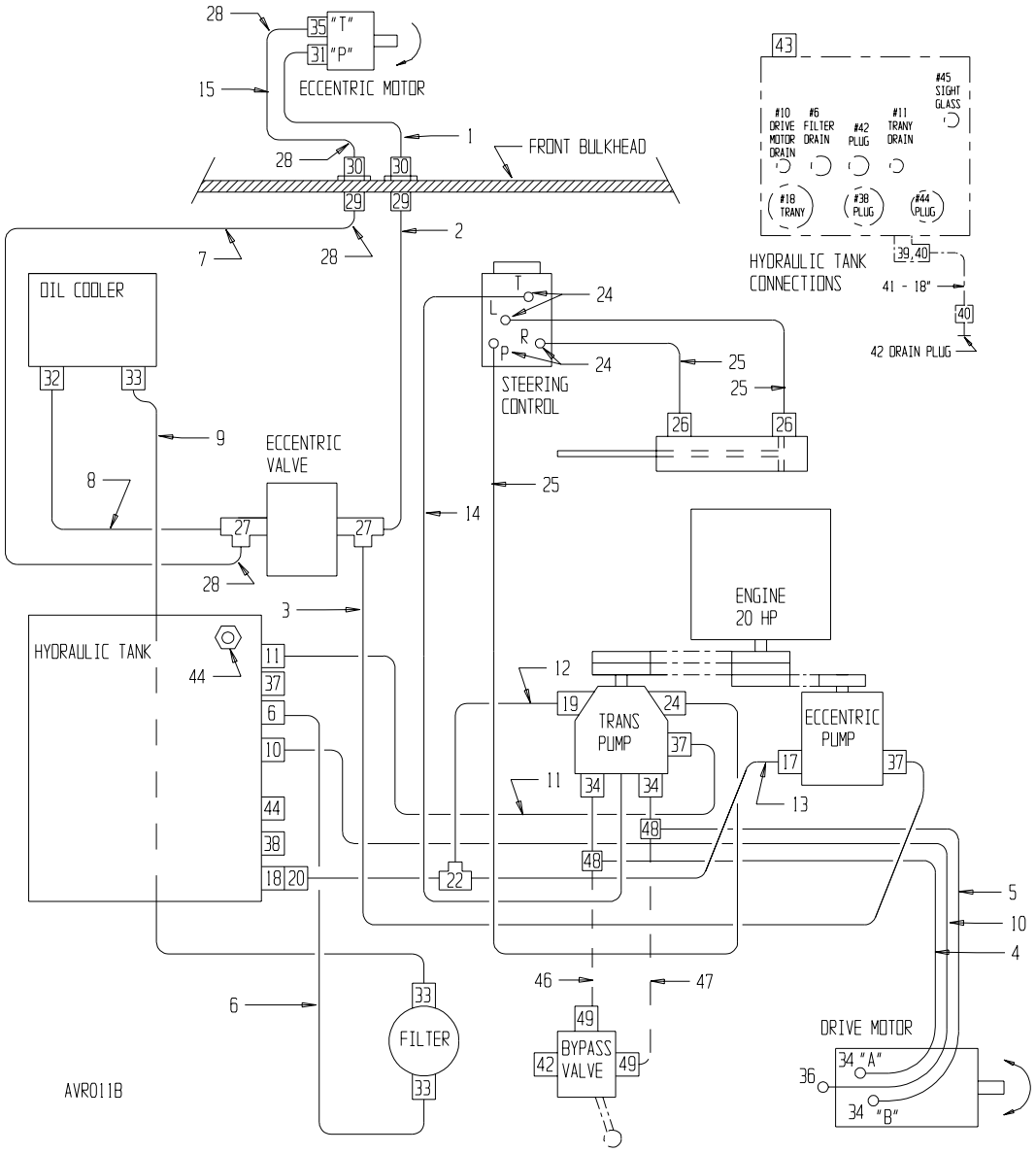


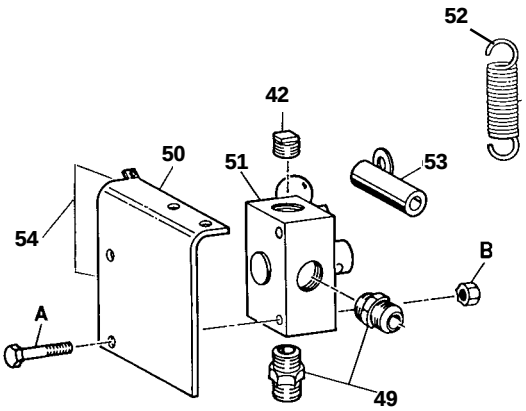


PARTS LIST

Piping - Deutz Diesel

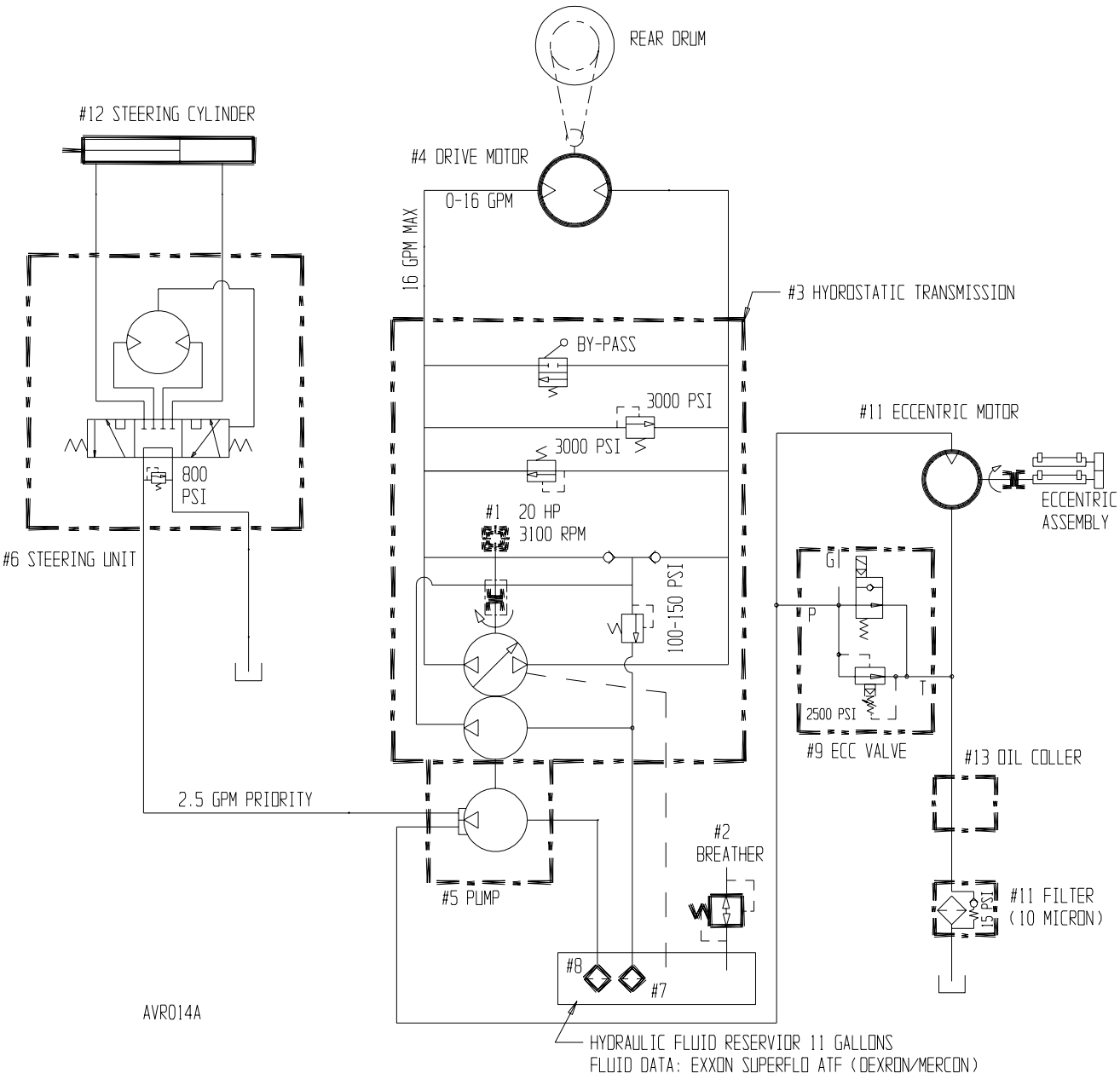
ITEM	PART NO.	DESCRIPTION	QTY.
1	46775	HOSE 3/4 RJ9 x 3/4 RJ9 49"	1
2	46776	HOSE 3/4 RJ9 x 3/4 RJ9 33	1
3	46809	HOSE 3/4RJ4 x 3/4RJ4 36"	1
4	46421	HOSE 3/4RJ 3/4RJL 52IN	1
5	46420	HOSE 3/4RJ 3/4RJ 52IN	1
6	46780	HOSE 1/2 NPT x 3/4 JSW 18 1/2	1
7	46781	HOSE 3/4 JSW x 3/4 JSW 56	1
8	46782	HOSE 3/4 JSW x 3/4 JSW 28	1
9	46783	HOSE 3/4 JSW x 3/4 JSW 48	1
10	46784	HOSE 3/8NPT x 9/16FJ 78"	1
11	46799	HOSE 3/8NPT x 3/4FJ 27"	1
12	46554	HOSE 7/8FJ x 7/8FJ 22"	1
13	46800	HOSE 1-1/16FJ 7/8FJ 16"	1
14	46788	HOSE 9/16FJ 9/16RJ9 56	1
15	46789	HOSE 3/4 JJW x 3/4 JSW 47	1
16	46558	FTG EL45 7/8 JSW	1
17	46801	FTG EL 45 1-1/16J 1-5/16OR	1
18	46156	FTG RDCR 1-1/4MPT x 1/2FPT	1
19	46124	FTG HYD STR 7/8J x 7/8OR	1
20	46179	FTG HYD STR 1/2NPT 7/8J	1
22	46180	FTG HYD TEE 7/8JIC RUN	1
24	46115	FTG HYD STR 9/16J 9/16OR	6
25	46657	HOSE 9/16FJ x 9/16RJ 70"	3
26	46181	FTG HYD 9/16J 3/8NPT	2
27	46795	FTG TEE 3/4OR x 3/4J X 3/4J	2
28	46123	FTG HYD 90 EL 3/4J x 3/4JSW	4
29	46796	FTG LONG 3/4J x 3/4J	2
30	46797	NUT HYD 3/4JIC	2
31	46324	FTG HYD EL 3/4J 1-1/16OR	1
32	46327	FTG HYD ST 3/4NPT 3/4J	1
33	46331	FTG EL 90 3/4J 3/4NPT	3
34	46197	FTG HYD 3/4J 7/8OR 6400-8-10	4
35	46647	FTG HYD 3/4J x 1-1/16OR	1
36	46182	FTG EL 90 9/16J 7/16OR	1
37	46366	FTG EL 90 3/4J 7/8OR	2
38	46802	PLUG PIPE 1-1/4NPT HEX HD ZN	1
39	46112	ELBOW, STREET, 1/2 x 90 DEG	1


28
35 "T"
31 "P"
15
ECCENTRIC MOTOR
1
FRONT BULKHEAD
28
30
30
29
29
2
7
28
43
#45 SIGHT GLASS
#10 DRIVE MOTOR DRAIN
#6 FILTER DRAIN
#42 PLUG
#11 TRANY DRAIN
#18 TRANY
#38 PLUG
#44 PLUG
HYDRAULIC TANK CONNECTIONS
39,40
41 - 18"
40
42 DRAIN PLUG
OIL COOLER
32
33
T
L
P
R
24
24
25
25
STEERING CONTROL
26
26
9
ECCENTRIC VALVE
8
27
27
25
14
28
3
ENGINE 20 HP
HYDRAULIC TANK
44
11
37
6
10
44
38
18 20
12
19
24
TRANS PUMP
37
ECCENTRIC PUMP
17
37
11
34
34
13
48
48
22
5
10
4
6
33
FILTER
33
46
47
49
42
BYPASS VALVE
49
DRIVE MOTOR
34 "A"
36
34 "B"
AVR011B


52
42
50
51
53
54
B
A
49

40	46132	FTG HYD 1/2NPT 5/8H-BARB	1
41	46803	HOSE 5/8 PUSH-LOC	1
42	46107	PLUG 1/2 NPT SQ HD BLK	3
43	46173	PLUG 3/4 NPT SQ HD ZN	1
44	46172	PLUG 1 NPT SQ SOC BLK	5
45	38543	SIGHT GLASS	1
46	46810	HOSE 3/4FJ 3/4FJ 20"	1
47	46811	HOSE 3/4FJ 3/4RJ9 17.5"	1
48	46328	FTG HYD TEE 3/4JSW 3/4J	2
49	47256	FTG HYD 3/4J 1/2NPT	2
50	22564-2	BRACKET BYPASS	1
51	46171	VALVE BYPASS	1
52	38207	SPRING BYPASS	1
53	22565-2	TUBE BYPASS	1
54	55147	TAG BYPASS	1
A*	80579	HHCS 5/16 - 18 x 2 1/4 GR5 ZN	2
B	80114	NUTNY 5/16 - 18 ZN	2

* Loctite Required


REAR DRUM
#12 STEERING CYLINDER
#4 DRIVE MOTOR
0-16 GPM
16 GPM MAX
#3 HYDROSTATIC TRANSMISSION
BY-PASS
3000 PSI
3000 PSI
#11 ECCENTRIC MOTOR
800
PSI
#1 20 HP
3100 RPM
ECCENTRIC
ASSEMBLY
#6 STEERING UNIT
100-150 PSI
G
P
T
2500 PSI
#9 ECC VALVE
#13 OIL COLLER
2.5 GPM PRIORITY
#2
BREATHER
#5 PUMP
#11 FILTER
(10 MICRON)
15 PSI
#8
#7
AVR014A
HYDRAULIC FLUID RESERVIOR 11 GALLONS
FLUID DATA: EXXON SUPERFLO ATF (DEXRON/MERCON)

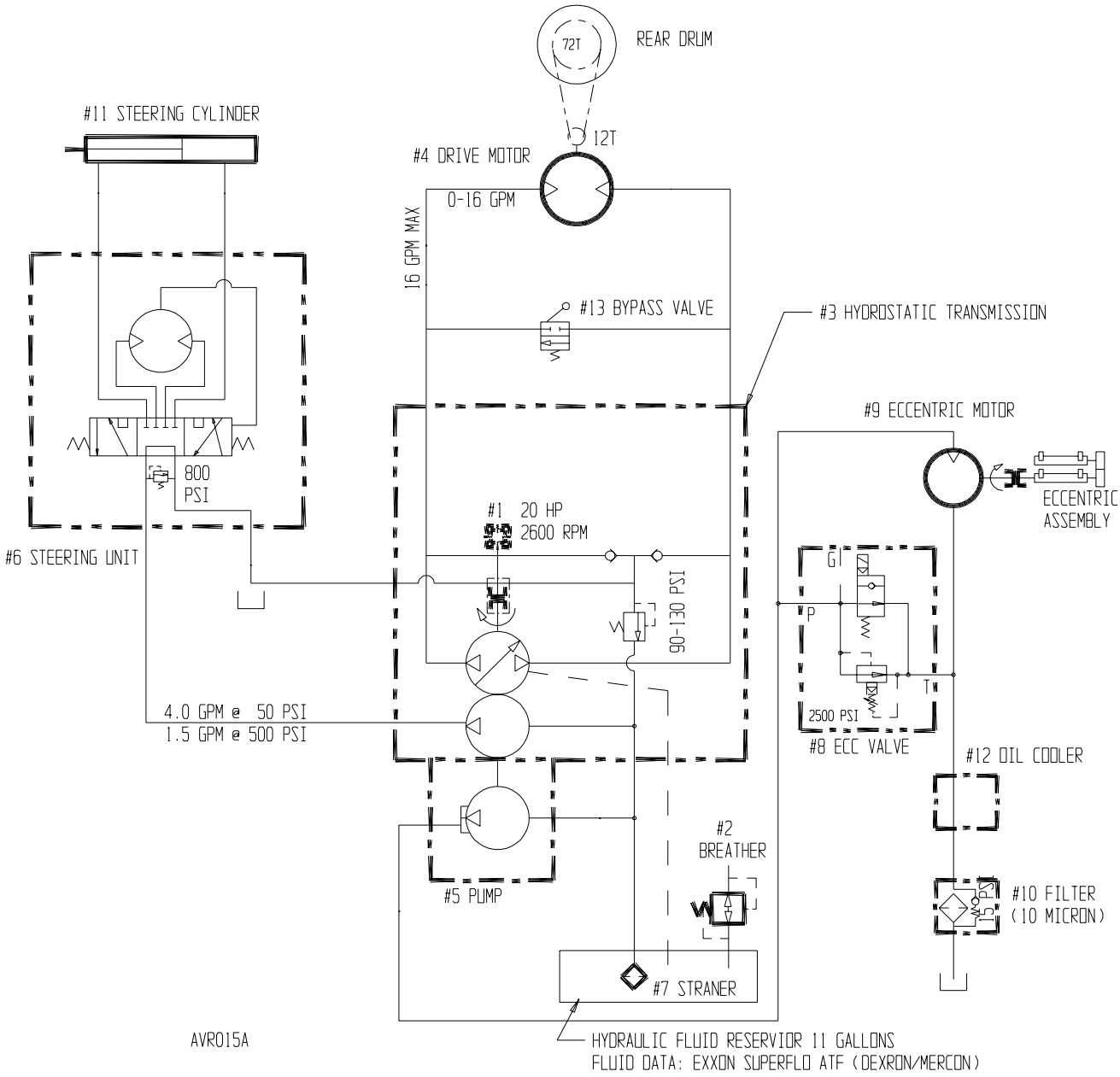
PARTS LIST

Hydraulic Schematic - Honda Gas

ITEM	PART NO.	DESCRIPTION	QTY.
1	43775	Engine Honda 20HP	1
2	35483	Breather	1
3	39586	Pump Transmission	1
4	38093	Motor Drive	1
5	39086	Pump Steering/Eccentric	1
6	46653	Control Steering	1
7	39087	Strainer 5 GPM	1
8	39088	Strainer 10 GPM	1
9	39089	Valve Eccentric	1
10	39587	Motor Eccentric	1
11	35444	Filter Hydraulic	1
	35445	Element Filter	1
12	38084	Cylinder Steering	1
13	38446	Cooler Oil	1
	38448	MTR/Fan Assembly	1

PARTS LIST

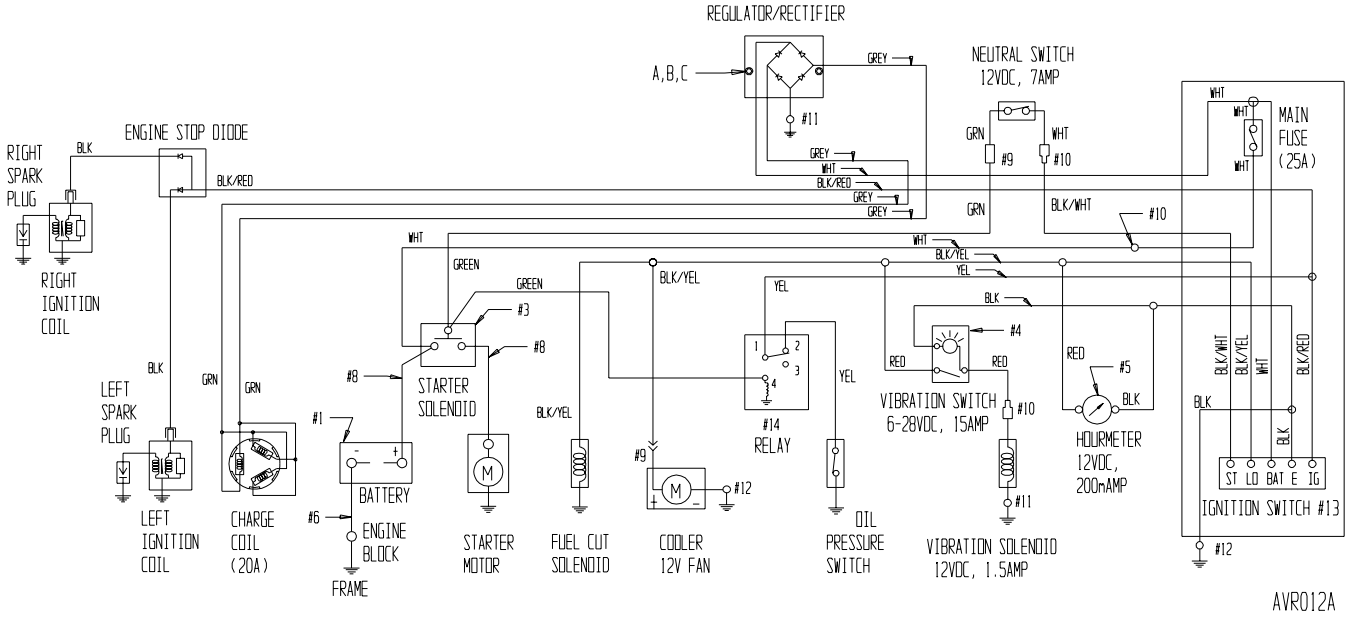
Hydraulic Schematic - Deutz Diesel



PARTS LIST

Hydraulic Schematic - Deutz Diesel

ITEM	PART NO.	DESCRIPTION	QTY.
1	30253	Engine Deutz 20HP	1
2	35483	Breather	1
3	38746	Pump Transmission	1
4	38093	Motor Drive	1
5	39572	Pump Eccentric	1
6	46653	Control Steering	1
7	35482	Strainer 25 GPM	1
8	39089	Valve Eccentric	1
9	39587	Motor Eccentric	1
10	35444	Filter Hydraulic	1
	35445	Element Filter	1
11	38084	Cylinder Steering	1
12	38446	Cooler Oil	1
	38448	MTR/Fan Assembly	1
13	46171	Valve Bypass	1


REGULATOR/RECTIFIER
A,B,C
GREY
#11
NEUTRAL SWITCH
12VDC, 7AMP
GRN
WHT
#9
#10
MAIN
FUSE
(25A)
ENGINE STOP DIODE
RIGHT
SPARK
PLUG
BLK
BLK/RED
RIGHT
IGNITION
COIL
BLK/WHT
GREEN
BLK/YEL
YEL
#3
#8
#4
#5
#14
RELAY
STARTER
SOLENOID
VIBRATION SWITCH
6-28VDC, 15AMP
HOURMETER
12VDC,
200mAMP
RED
BLK
BLK/WHT
BLK/YEL
BLK/RED
ST LO BAT E IG
IGNITION SWITCH #13
LEFT
SPARK
PLUG
LEFT
IGNITION
COIL
CHARGE
COIL
(20A)
#1
#6
BATTERY
ENGINE
BLOCK
FRAME
STARTER
MOTOR
FUEL CUT
SOLENOID
#9
#12
COOLER
12V FAN
OIL
PRESSURE
SWITCH
VIBRATION SOLENOID
12VDC, 1.5AMP
#12
AVR012A

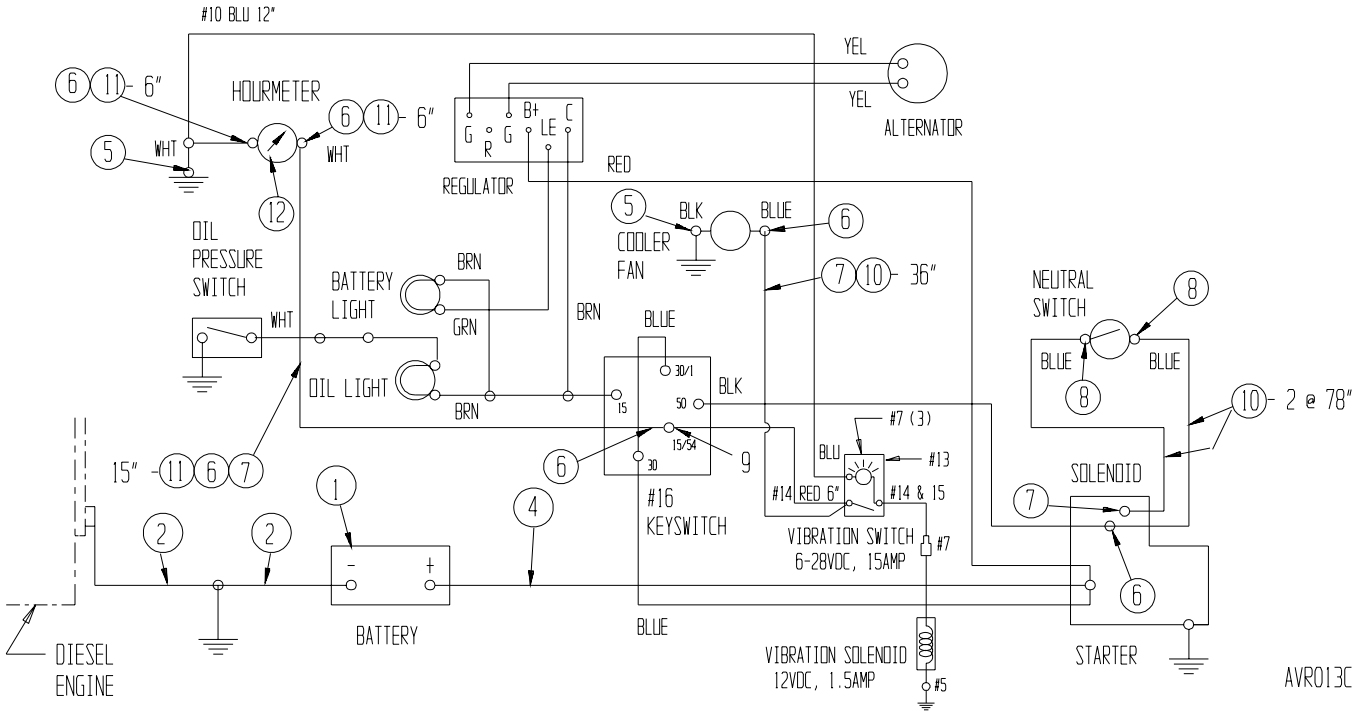
PARTS LIST

Wiring Schematic - Honda Gas

ITEM	PART NO.	DESCRIPTION	QTY.
1	38543	Battery	1
2	48402	Harness	1
3	48269	Solenoid	1
4	39653	Switch Vibration	1
5	36268	Hour meter	1
6	48284	Cable 25” Black	1
8	48363	Cable 15” Red	2
9	48278	Term Female .25F-Insul 14-16	1
10	48285	Term Male .25 F-Insul 14-16	2
11	36115	Term 5/16 Ring Insul 14-16	2
12	36116	Term ¼ Ring Insul 14-16	2
13	31227	Ignition Switch Assy	1
14	48364	Relay	1

				TORQUE	
ITEM	**PART NO.**	**DESCRIPTION**	**QTY.**	**FT. LBS.**	**Nm**
A	80851	NUTNY M6 ZN	2	-	-
B	80856	WSHR M6 Flat ZN	2	-	-
C	80811*	HHCS M6 x 1 8.8 ZN	2	-	-

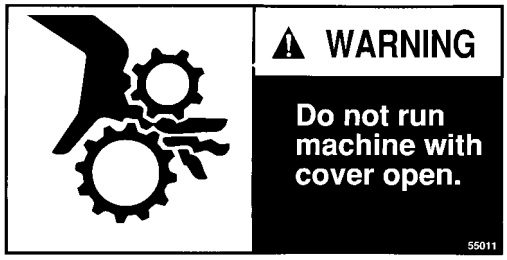
* Loctite Required

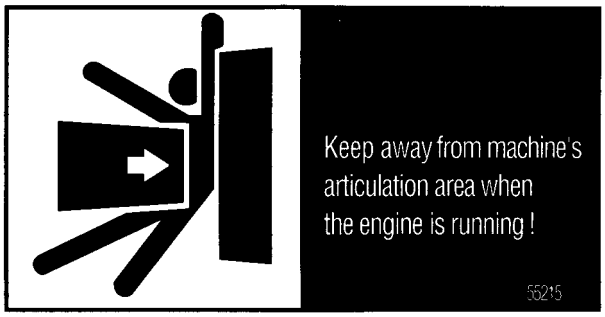

#10 BLU 12"
YEL
YEL
ALTERNATOR
6 11 - 6"
HOURMETER
6 11 - 6"
5
WHT
WHT
12
G R G B+ LE C
REGULATOR
RED
5
BLK
BLUE
6
COOLER FAN
7 10 - 36"
OIL PRESSURE SWITCH
WHT
BATTERY LIGHT
BRN
GRN
OIL LIGHT
BRN
BRN
BLUE
30/1
15
50
BLK
15/54
30
6
9
#16 KEYSWITCH
#7 (3)
BLU
#13
#14
RED 6"
#14 & 15
VIBRATION SWITCH
6-28VDC, 15AMP
#7
NEUTRAL SWITCH
8
BLUE
BLUE
8
10 - 2 @ 78"
SOLENOID
7
6
15" - 11 6 7
1
2
2
4
- +
BATTERY
BLUE
VIBRATION SOLENOID
12VDC, 1.5AMP
#5
STARTER
DIESEL ENGINE
AVR013C

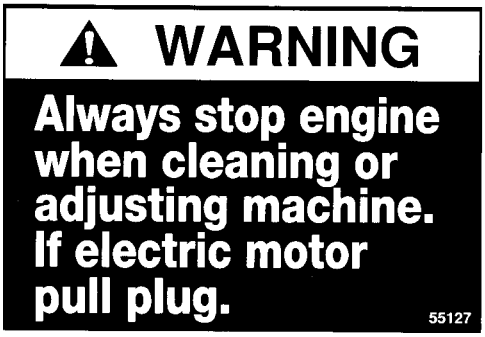
PARTS LIST

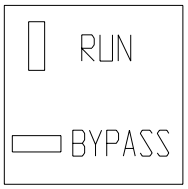
Wiring Schematic - Deutz Diesel

ITEM	PART NO.	DESCRIPTION	
1	38543	Battery 350 CCA	1
2	38115	Cable Battery 12-1/2	2
4	48294	Cable Starter 54”	1
5	36115	Term Ring .31 Insul 14-16GA	3
6	48278	Term Fem .25 F-Insul 14-16GA	6
7	48285	Term Male .25 F-Insul 14-16GA	7
8	48013	Term Ring #10 Insul 14-16GA	2
9	36273	Term P-back .25 Insul 14-16GA	1
10	48235	Wire 14GA Type SXL Blue	16.5 Ft.
11	48233	Wire 14GA Type SXL White	2.25 Ft.
12	36268	Hour Meter	1
13	38562	Switch Vibration	1
14	48409	Wire 14GA Type SXL Red	4.5 Ft.
15	39508	Loom 3/8	4 Ft.
16	36287	Keyswitch	1
17	35448	Clamp	1

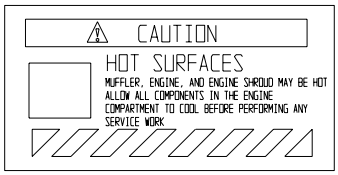

WARNING
Do not run machine with cover open.
55011


Keep away from machine's articulation area when the engine is running!
55215


WARNING
Always stop engine when cleaning or adjusting machine. If electric motor pull plug.
55127

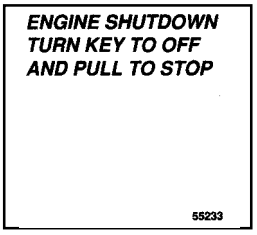

RUN
BYPASS

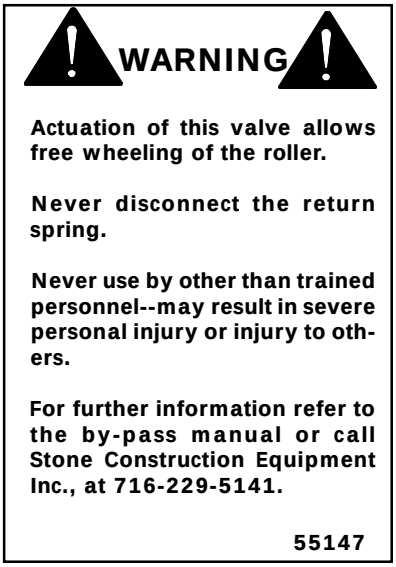
55297

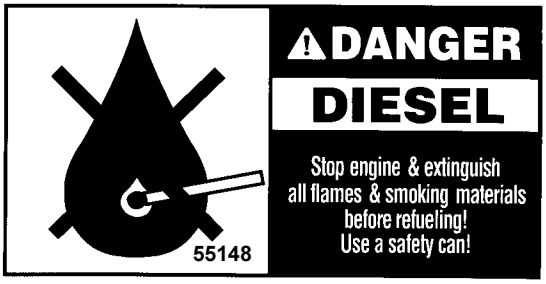

CAUTION
HOT SURFACES
MUFFLER, ENGINE, AND ENGINE SHROUD MAY BE HOT ALLOW ALL COMPONENTS IN THE ENGINE COMPARTMENT TO COOL BEFORE PERFORMING ANY SERVICE WORK.

55371

DANGER
GASOLINE
Stop engine & extinguish all flames & smoking materials before refueling! Use a safety can!
55128


ENGINE SHUTDOWN
TURN KEY TO OFF
AND PULL TO STOP
55233


WARNING
Actuation of this valve allows free wheeling of the roller.
Never disconnect the return spring.
Never use by other than trained personnel--may result in severe personal injury or injury to others.
For further information refer to the by-pass manual or call Stone Construction Equipment Inc., at 716-229-5141.
55147


DANGER
DIESEL
Stop engine & extinguish all flames & smoking materials before refueling! Use a safety can!
55148

NOTICE
CONTACT THE MANUFACTURER IMMEDIATELY AT 1-800-888-9926 IF SAFETY OR HAZARD DECALS OR OWNER'S MANUAL ARE MISSING FROM THIS EQUIPMENT.
55156

CAUTION
Before transporting turn the fuel valve (clockwise) to the off position, or hard starting and engine damage may occur.

PARTS LIST

Decal Identification

ITEM	PART NO.	DESCRIPTION	QTY.
1	55011	DECAL WARNING COVER OPEN	1
2	55127	DECAL WARNING STOP ENGINE	1
3	55293	DECAL DANGER GASOLINE	1
4	55147	TAG HYD BY-PASS	1
5	55148	DECAL WARNING DIESEL	1
6	55156	DECAL NOTICE	1
7	55215	DECAL WARNING PINCH POINT	1
8	55233	DECAL DIESEL SHUTDOWN	1
9#	55364	DECAL SET CONTROL FWD/RVS	1
10#	55380	DECAL MAINTENANCE CHART	1
11#	55214	DECAL STA-BIL	1
12#	55227	DECAL SPRINKLERS	1
13#	55231	DECAL KEY SWITCH DIESEL	1
14#	55232	DECAL CAUTION KEY SWITCH DIESEL	1
15#	55234	DECAL HYD FLUID ATF	1
16#	55328	DECAL ENGINE RPM	1
17#	55304	DECAL LOGO STRIPE	1
18#	55305	DECAL WOLFPAC 4000 RH	1
19#	55306	DECAL WOLFPAC 4000 LH	1
20#	55311	DECAL WOLFHEAD	1
21	55371	DECAL HOT SURFACES	1
22	55297	DECAL BYPASS	1
23	55375	DECAL FUEL SHUT-OFF	1

Not Shown

CALIFORNIA PROPOSITION 65 WARNING: Engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Bred Tough. Born to Work.
The Way It Ought To Be.

Stone Construction Equipment, Inc.
P.O. Box 150, Honeoye, New York 14471
Phone: (800) 888-9926
Fax: 716-229-2363
e-mail: sceny@mcimail.com
www: stone-equip.com

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